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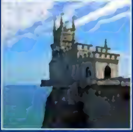
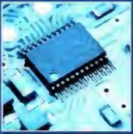
The Ukraine Competitiveness Report 2008

Towards Sustained Growth and Prosperity

Margareta Drzeniek Hanouz
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World Economic Forum
Geneva, Switzerland 2008

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MARGARETA DRZENIEK HANOUZ
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Country Classifications

This page shows country groupings that are used throughout the report for comparison purposes.

Commonwealth of Independent States (CIS)

Armenia
Azerbaijan
Georgia
Kazakhstan
Kyrgyz Republic
Moldova
Russian Federation
Tajikistan
Ukraine
Uzbekistan

Note: Belarus, although a CIS member country, is not included in this list because it is not covered in the Global Competitiveness Report series.

European Union (EU)

European Union's 15 member countries prior to 2004 (EU 15)

Austria
Belgium
Denmark
Finland
France
Germany
Greece
Ireland
Italy
Luxembourg
Netherlands
Portugal
Spain
Sweden
United Kingdom

European Union's latest 12 member countries (EU Accession 12)

Bulgaria
Cyprus
Czech Republic
Estonia
Hungary
Latvia
Lithuania
Malta
Poland
Romania
Slovak Republic
Slovenia

Preface

KLAUS SCHWAB

Executive Chairman, World Economic Forum

The publication of *The Ukraine Competitiveness Report 2008* comes at an important time for Ukraine and for the world economy. Against the backdrop of the country's reform efforts, the global competitiveness landscape is undergoing profound shifts. Following a period of buoyant global growth, the financial market crisis is casting a shadow over the international economic environment, carrying the risk of a global economic slowdown. These recent developments make it even more imperative for Ukraine to master not only its own competitive strengths and weaknesses but also to navigate a rapidly changing global environment.

Since *The Global Competitiveness Report* (GCR) began its coverage of Ukraine in 1997, the country's performance has shown a mixture of remarkable promise amid significant challenges. Following the lost decade of the 1990s Ukraine has been witnessing some of the highest growth rates in the region, dynamic business activity and increasing interest from foreign investors.

Although many reforms have been introduced in Ukraine since independence, to date, the country has not been able to fully live up to its potential and to capitalize on its abundant human capital, its natural resources and favorable geographic position between two large markets – the European Union and the Commonwealth of Independent States. As in many countries, apprehension about the potential adverse effects of reforms is one of the factors that has held back the implementation of competitiveness-enhancing policies. In this context, an objective assessment of the country's competitiveness can provide a platform for discussion and for highlighting the benefits a more competitive environment can bring to Ukraine's people.

Since their inception in 1979, the World Economic Forum's competitiveness reports have served in many countries as key tools for measuring their competitive condition. The findings of the GCR and other benchmarking studies are often used as an instrument for initiating dialogue between the public and private sectors as well as across political divides. By providing an objective and independent assessment they help to align different political and social groups behind the aim of improving competitiveness.

The World Economic Forum is uniquely positioned to provide thought leadership to countries in the field of competitiveness. As the Foundation for Effective Governance seeks to strengthen Ukraine's analytical capacity in the area of competitiveness and economic reform, the World Economic Forum is pleased to put its expertise at the service of this important endeavor. *The Ukraine Competitiveness Report 2008*, which builds on the methodology of the World Economic Forum's Global Competitiveness Index, aims at providing a relevant account of Ukraine's competitive advantages and disadvantages, by offering an in-depth assessment of the 12 categories that impact the country's competitiveness for the nation as a whole and for 12 selected regions.

We would like to thank the editors of this report, Margareta Drzeniek Hanouz and Thierry Geiger for their thought leadership and the authors Jennifer Blanke, Irene Mia and Arsene Panov for their contributions and commitment to this project. We would also like to express our sincere gratitude to Fiona Paua, Head of Strategic Insight Teams at the World Economic Forum for her leadership in conceptualizing the report, as well as to the other members of the Global Competitiveness Network team: Ciara Browne, Agustina Ciocia, Eva Trujillo Herrera, and Pearl Samandari. We are grateful to the Ukrainian experts who contributed through articles and discussions and to our Ukrainian partner institute, the Centre for Social and Economic Research Ukraine (CASE) for conducting the Executive Opinion Survey. Last but not least, we would like to thank the Foundation for Effective Governance for their support.

Foreword

NATALIYA IZOSIMOVA

Director, Foundation for Effective Governance

The publication of the first *Ukraine Competitiveness Report*, carried out by the World Economic Forum in partnership with the Foundation for Effective Governance, is a significant step forward for Ukraine's economic and social development.

While the country's economy continues to grow and has recorded average GDP increases of more than 7% per annum, expert opinion recognizes that to maintain this pace of growth and development, economic reform is necessary in key areas. This is where *The Ukraine Competitiveness Report 2008* can help to inform opinion and guide the country as to which policy changes are necessary to improve the economy. Such reforms are expected to both raise the living standards of all Ukrainians and help the country establish its position among the leading European nations.

With the publication of this report, Ukraine can now objectively benchmark its economic performance against the leading economies of the world and its regional competitors. Readers can also learn from examples of how others have overcome similar challenges to those that the country now faces. This insight will help all stakeholders key to the country's economic and social success better understand and prioritize the necessary changes and reforms.

From the Foundation of Effective Governance's perspective, *The Ukraine Competitiveness Report 2008* is an example of our programme of systematically reviewing the country's long-term reform and economic development agenda by applying international best practice. The Foundation's mission is to improve the quality of life and standard of living of all Ukrainians. A fundamental element of this mission is to provide funding for long-term projects that focus on the country's economic development agenda and bring the best international and Ukrainian expertise to bear.

The partnership with the World Economic Forum is an example of this principle in action. The Forum is the world's best-known independent international organization, which is committed to improving the state of the world. Since 1979 it has been publishing *The Global Competitiveness Report (GCR)*, which now covers 131 economies. The GCR has been used as a tool globally by governments, academics and business leaders to better understand the strengths and weaknesses of their economies. The information has also been used to pinpoint the economic reforms and actions required.

In addition to benchmarking Ukraine's country performance, the Foundation also aimed to gain a deeper understanding of the role played by Ukraine's regions in the country's development. The report takes a detailed look at 12 of the country's regions to help understand the country's regional diversity and to examine the different challenges the regions face in improving their economic performance. The results will provide food for thought for both national and regional administrations in setting the policy agenda.

One of the Foundation's clear principles is a practice-orientated approach. This means that we seek to provide practical, implementable, recommendations for the country's long-term economic development and to do this consistently through time. To this end, *The Ukraine Competitiveness Report* will be published annually by the Foundation to help track the country's economic reform and development programme. It is also expected to give policymakers and government deep insight into the success and challenges of economic reform.

The Foundation sincerely hopes that this independent, objective analysis of Ukraine's economic strengths and weaknesses will act as a catalyst for open discussion and debate among government, civil society, business and other stakeholders on the priorities for change. As a foundation, we will actively encourage this debate and look forward to the discussions and real reforms that will surely follow.

Executive Summary

MARGARETA DRZENIEK HANOUZ
THIERRY GEIGER
World Economic Forum

There is no doubt that Ukraine is a country with great – and unrealized – potential. The chaotic years of transition in the 1990s left a heavy toll on the country's economy, resulting in high levels of corruption, depleted infrastructure, an incomplete reform of the institutional framework, unrestructured post-Soviet conglomerates, and a political constellation that blocks rather than favors reform. Yet, since the end of the lost decade of the 1990s, Ukraine's growth rates have averaged more than 7%. Major economic reforms will be necessary to further advance the country's competitiveness, but their implementation will require a certain degree of consensus across the political spectrum. To inform this process, an objective assessment of the country's competitive strengths and weaknesses provides a basis for discussion and debate.

The purpose of this report is to provide such an independent and objective assessment of Ukraine's competitiveness by benchmarking the country's performance against the 130 other economies covered by *The Global Competitiveness Report (GCR) 2007-2008*. To accomplish this, we use the methodology employed by the GCR series as presented in Chapter 1.

Chapter 2 benchmarks Ukraine's overall competitiveness against a number of countries, and finds that Ukraine's competitive potential remains unrealized. Ukraine, ranked 73rd among 131 countries, lags significantly behind the new EU member countries (EU Accession 12) with the exception of Bulgaria and Romania. The country also underperforms when compared to some CIS members such as Russia, Kazakhstan and Uzbekistan. What is worrisome is that over the past 10 years, no major improvements in Ukraine's competitiveness ranking have been recorded, although reform efforts undertaken by Ukraine maintained the country at the 1997 level, when it was first ranked.

Chapter 3 examines the results on the 12 pillars of the Global Competitiveness Index, benchmarking Ukraine against the selected countries and analyzing its performance on each pillar in detail. The pillars include: institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training, goods, labor and financial market efficiency, technological readiness, market size, business sophistication, and innovation. For a country transitioning towards the efficiency-driven stage of development, solid performance on the first four pillars would contribute more strongly to enhancing competitiveness. Second in importance are higher education and training, efficiency of the goods, labor and financial markets, technology, and market size. The last two pillars – business sophistication and innovation – are of greater importance for more developed economies.

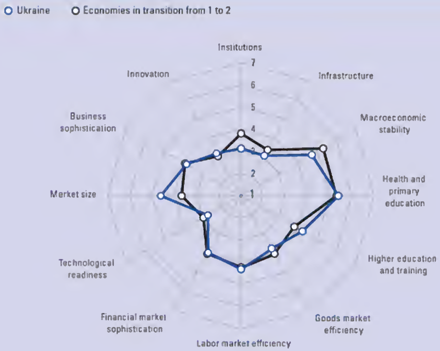
Public and private **institutions**, assessed at 115th position out of 131 countries, are the weak spot in Ukraine's competitiveness landscape and reform in this area should be a priority. This is also important because a well-functioning institutional framework is critical at Ukraine's current stage of development. Public institutions are opaque and inefficient, plagued by corruption and favoritism; an efficient legal framework is lacking; and weakly defined property rights affect business in its operations. Because the overall weak security situation in the country imposes unnecessary costs on business, the issue of unreliable police services must be addressed. Underdeveloped private institutions are among the most serious competitive weaknesses of Ukraine and the issue of weak corporate governance standards should be addressed urgently. These issues undermine investor confidence and the development of the stock market.

The results also show that transport, energy and telecommunications **infrastructure** are in need of upgrading, as reflected in the overall 77th rank the country obtains on this pillar. Although the quality of railroads is not too far behind EU levels, roads and air transport infrastructure are not on a par with international standards. This prevents the country from fully utilizing its potential as a transit corridor resulting from its favorable geographical location.

Great improvements have been realized in Ukraine over the past years in terms of **macroeconomic stability**. Inflation has been brought down to one-digit levels and the fiscal stance stabilized, which allowed officials to considerably reduce government debt. This stability has considerably improved the score on the macroeconomic pillar over the past years, yet was insufficient to improve Ukraine's ranking beyond the 82nd position, given the worldwide trend of increasing macroeconomic stability. Curbing inflation further could considerably improve Ukraine's ranking on this pillar.

Ukraine obtains a low 74th rank on the **health and primary education** pillar of the GCR. Although the quality of primary education is fairly good, enrolment rates are too low by international standards. With respect to the health situation, the prevalence of HIV/AIDS and the cost of tuberculosis to businesses are particular

Figure 1 Ukraine's performance against peer countries



problems. Another worry is the negative demographic trend that may put an additional strain on the pension system in the future.

Ranked 53rd, the fairly high level of **higher education and training** is one of Ukraine's competitive advantages that the country should build upon. Ukraine's education system ensures easy access to schooling and as a result boasts fairly high enrolment rates compared to other countries at the same stage of development. There are high enrolment rates for secondary schools, but in particular for universities. Although the educational system needs to be further adapted to meet the needs of a market economy, for example through improving management education, the quality of the overall system – in particular of math and science education – is good. However, the business sector should get more involved in on-the-job training, which is currently below desirable levels to bring the available skill pool up to the standards of a market economy.

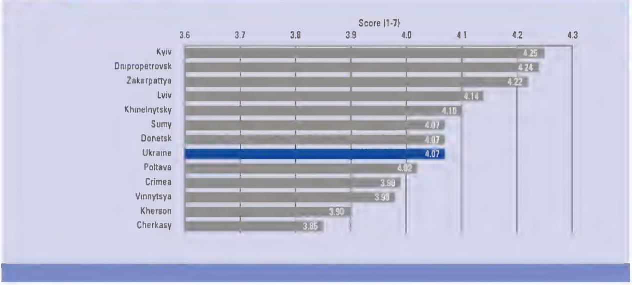
Goods market efficiency is one of the weakest areas in Ukraine's overall competitiveness assessment. Although this is the case in most transition economies, Ukraine obtains particularly low marks on this category. Domestic and foreign competition, which are the most important drivers of efficient markets, are weakened by ineffective anti-monopoly policy, high concentration in markets and a distortionary taxation scheme. This situation is exacerbated by diverse barriers to market entry of new companies, trade and foreign investment. Reforms in this area should be among the country's priorities. This weak assessment is all the more worrying because an efficient goods market is key for countries moving towards the efficiency-driven stage of development.

The Ukrainian **labor market** operates fairly efficiently, ranked 65th out of 131 countries. A major strength is the efficient use of talent, with a close link between pay and productivity and a high level of female participation in the labor force. However, brain drain, nepotism and favoritism when employing management staff remain major problems. Despite some advantages, the labor market remains fairly rigid with respect to firing and hiring procedures and the wage setting process.

With respect to **financial market sophistication** Ukraine is ranked a mediocre 85th. Although finance in the form of loans and risk capital is fairly easily available, the local equity market is underdeveloped, mainly due to insufficient protection of investors and regulation of securities exchanges. Soundness of the banking sector has converged towards EU Accession levels over the past 10 years, yet remains significantly below EU 15 standards.

With its fairly low level of **technological readiness**, ranked 93rd, Ukraine foregoes many development opportunities offered by technologies adopted from abroad. The latest technologies are not widely available in Ukraine and companies are often unwilling or unable to adapt those to upgrade their production processes and products. Instead, many companies still rely on innovation, which, for a country at Ukraine's level of development is not the most effective form of increasing the efficiency of business operations. A more targeted approach would be to leverage FDI and licensing schemes to benefit from technology available elsewhere.

Figure 2 Competitiveness of selected Ukrainian regions



A government programme aimed at increasing technology transfer would greatly contribute to enhancing Ukraine's competitiveness. In this context, the use of ICT is particularly important, as it can enhance productivity across many sectors of the economy. And the data show that the use of the Internet and personal computers is fairly low in Ukraine.

With a rank of 26, the country's **market size** offers numerous opportunities for Ukrainian businesses. The large domestic market with rising purchasing power allows businesses to realize economies of scale. In addition, Ukraine's businesses also serve a large number of export markets. But Ukraine has not yet attained the level of market size achieved by more export-oriented economies such as Malaysia. The country's recent WTO membership is expected to help expand export markets.

Business sophistication, where Ukraine ranks 81st, is one of the pillars that are currently less important for Ukraine's competitiveness given its stage of development. However, a further deepening of clusters, increasing the value added of products and services, and improving the quality and sophistication of management practices would be beneficial. Management practices are somewhat backward in the area of marketing. Businesses also point to problem areas within companies such as the reluctance to delegate authority and the allocation to friends and relatives of management positions.

Innovation, where Ukraine is ranked 65th, is an area of relative competitive strength. Although innovation may not be vital for a country at Ukraine's level of development, it would be imprudent to neglect the country's innovative capacity. A well-functioning intellectual property regime rather than large investments would most likely contribute more to upgrading the country's innovative capacity. Furthermore, if Ukraine wants to maintain its fairly good research capacity, research institutes need to be reoriented towards a stronger commercial focus in their activities and the negative trend in the availability of skilled staff over the past few years needs to be reversed.

Overall, the analysis of the 12 pillars of the GCI in Chapter 3 shows that Ukraine is facing many challenges in its efforts to reach a a more sustainable growth path. Upgrading public institutions, focusing on tackling corruption and favoritism, strengthening property rights, and raising corporate governance standards should be the top issues on Ukraine's reform agenda. This should be followed by a reform of the competition framework, including the trade and FDI regimes. Particular attention should also be given to intensifying technology transfer into the country.

Chapter 4 assesses the competitiveness of 12 selected regions representing different structures of the Ukrainian economy. Overall, the divergence between Ukrainian regions in terms of competitiveness is less pronounced than in terms of their wealth. Still, in the global ranking, the best performing region, the city of Kyiv, ranks at the level of Croatia and Cyprus, while the worst performing, Cherkasy, comes in right ahead of Armenia. The detailed rankings of the 12 regions are presented in Figure 2. Overall, the regions diverge most on the institutions pillar, while the labor markets pillar shows the least divergence within the country.

Chapter 5 assesses Ukraine's ability to use information and communications technologies (ICT) to advance the country's development using the results in the Networked Readiness Index (NRI) featured in the World Economic Forum's *Global Information Technology Report*. The author stresses the significant progress Ukraine has realized, as shown in the increase in NRI ranking by 11 places over the 2002–2007 period. However, Ukraine lags behind EU averages in most dimensions defining networked readiness and many challenges need to be addressed for the country to fully leverage the opportunities offered by ICT. Particular efforts are required to improve individual usage levels, notably by lowering the cost of ICT and improving the quality of ICT access. As the country displays a remarkable level of individual readiness, lowering the cost could translate into higher levels of usage once ICT access is made more affordable. Despite recent market reforms, the regulatory environment for doing business needs to be enhanced and the government could lead the way in networked readiness by more actively promoting ICT.

Chapter 6 assesses Ukraine's attractiveness for investment in the travel and tourism (T&T) sector using the Travel & Tourism Competitiveness Index featured in the World Economic Forum's *Travel & Tourism Competitiveness Report 2008*. Ukraine's long history as a tourist destination and its many natural and cultural endowments are clear strengths to build upon in developing its travel and tourism industry. However, the chapter identifies a number of obstacles that are hindering the country's T&T competitiveness in this area. These include creating a policy environment that is more conducive to the development of the T&T sector, including strengthened environmental legislation, as well as upgrading the country's transport and tourism infrastructure.

The report ends with a section containing detailed country profiles for Ukraine, the countries Ukraine is benchmarked against, as well as for the 12 regions assessed in Chapter 4.

The Ukraine Competitiveness Report 2008 provides an overview of both the current competitiveness of the country as well as recommendations for action. These recommendations reflect hard data and the views of business leaders expressed in the Executive Opinion Survey, and are intended to help policymakers identify priorities for reform and investment. The recommendations will also help them to make informed choices for the benefit of future generations.

Part I

Assessing Ukraine's Competitiveness

CHAPTER 1

Assessing Competitiveness of Nations: The Global Competitiveness Index

MARGARETA DRZENIEK HANOUZ
THIERRY GEIGER
World Economic Forum

The World Economic Forum has been assessing the competitiveness of nations for nearly three decades since its first competitiveness report in 1979. The reports study factors enabling national economies to achieve sustained economic growth and long-term prosperity. They provide businesses and policymakers with a benchmarking tool to enable an objective assessment of the relative strengths and weaknesses of their national economies and to make informed comparisons between countries. The outcomes can also help identify best practice cases in specific areas. They often serve as a platform for public-private dialogue and a basis for policymaking. Box 1.1 outlines how the GCR results have been used to improve Croatia's competitiveness.

Over the past years, *The Global Competitiveness Report*, *The Global Information Technology Report* and *The Travel & Tourism Competitiveness Report* have become part of the toolkit of policymakers in many countries around the world to highlight strengths and weaknesses and track progress over time. This chapter provides an overview of the methodology used by the World Economic Forum to assess the competitiveness of nations.

1.1 The 12 pillars of competitiveness

With continuous progress in theoretical and empirical economic research, the methodology used by the World Economic Forum to assess national competitiveness has inevitably evolved over time. The latest step in this evolution is the Global Competitiveness Index (GCI), which has been developed in cooperation with Professor Xavier Sala-i-Martin from Columbia University and was first introduced in 2004. Since then, the GCI – a highly comprehensive index for measuring national competitiveness, taking into account the microeconomic and macroeconomic foundations of national competitiveness – has been the World Economic Forum's main vehicle for assessing competitiveness.

The GCI is designed to assess the potential of countries to grow over the medium to longer term, taking into account the present level of development, based on the understanding that competitiveness is the set of institutions, policies and factors that determine the level of productivity of a country.

The level of productivity sets the sustainable level of prosperity that can be earned by an economy. More competitive economies tend to be able to produce higher levels of income for their citizens. The productivity level also determines the rates of return obtained by investments in an economy. Because the rates of return are the fundamental determinants of the growth rates of the economy, a more competitive economy is one that is likely to grow faster over the medium to long term.

This chapter draws on Sala-i-Martin et al. 2007 and Browne and Geiger 2007.

Box 1.1 Croatia boosts competitiveness

The use of the Global Competitiveness Index by Croatia's National Competitiveness Council (CNCC)* is a good example of how the World Economic Forum's benchmarking research can be carried forward and impact the policy agenda.

Established in 2002, the council is a multi-stakeholder organization, comprised of 22 representatives of the business sector, trade unions, the government, and academia. Its ambition is to reform Croatia's economy to make it one of the 40 most competitive economies in the world by the time it joins the European Union (EU).

One of CNCC's very first tasks was to collaborate with the World Economic Forum to include Croatia in *The Global Competitiveness Report* (GCR). The council then used the results of the GCR, along with other data, to identify the strengths and, most importantly, the weaknesses impeding Croatia's competitiveness. The results were regrouped into seven categories: education, institutions, cost and price competitiveness, innovation and technology, strengthening of SMEs, regional and cluster development, change acceptance and leadership.

Their analysis was presented in 2003 in the first *Report on Croatian Competitiveness*. The council then set up working groups of experts and practitioners with the task of formulating recommendations in each of the seven areas. This resulted in a total of 55 policy recommendations, which were reflected in the GCR results.

Prime Minister Ivo Sanader made the recommendations an integral part of his economic agenda, while the Delegation of the European Commission to Croatia also declared that 90% of the recommendations are what the EU expects Croatia to do enroute to EU accession.

A the same time, the council laid out four quantifiable 'National Strategic Objectives' to be met within 10 years, achievable through implementing the recommendations. It also invested – and is still spending – time educating the public about the importance of competitiveness and the need for change.

Initially, the recommendations were to be implemented by taskforces co-chaired by CNCC representatives and government officials. However, this approach proved unsuccessful. Instead, ministries took on the responsibility. The council monitors progress through surveys, interviews and other metrics. After two years, some 85% of the recommendations were at various stages of implementation.

The GCR is not the only World Economic Forum publication used by the council. Released in 2007, *The Recommendations for Increasing Information and Communication Technologies (ICT) Competitiveness of Croatia* heavily draw on the findings of the World Economic Forum's *Global Information Technology Report* to highlight the importance of ICT for economic development and push the ICT agenda in Croatia. The launch of major initiatives, such as e-Croatia and e-Education, are direct outcomes of CNCC's efforts in this area.

CNCC also intends to promote the sustainable development of tourism in Croatia – a sector with tremendous potential – using the results of the World Economic Forum's recently published *Travel & Tourism Competitiveness Report 2008*.

In addition, CNCC is one of the 140 institutions that form the World Economic Forum's community of Partner Institutes. In this capacity, it conducts the annual Executive Opinion Survey in Croatia and actively participates in the dissemination of the World Economic Forum's work. In return, Partner Institutes benefit from advanced and privileged access to results and to our unique dataset, as well as being part of a global network of experts on competitiveness.

CNCC's success story is one among many. From Ecuador to Ireland, from Kuwait to Pakistan, examples abound of competitiveness councils, universities, think tanks and governments, making extensive use of the World Economic Forum's benchmarking work to boost the competitiveness of their country.

* Website: http://nvk.multilink.hr.

As a result, the concept of competitiveness involves static and dynamic components. The productivity of a country clearly determines its ability to sustain a high level of income. However, it is also one of the central determinants of the returns to investment, which is one of the central factors explaining an economy's growth potential.

The World Economic Forum's experience in studying competitiveness has made it clear that the determinants of competitiveness are many and complex. This is supported by economic research. The question of what determines the wealth of nations has long been at the forefront of economic research and has greatly influenced economic policymaking over time. In the 20th century, neoclassical economists emphasized investment in physical capital and infrastructure. What followed were investments in physical capital, particularly in transition economies, which had only limited results on the countries' wealth. Investment in physical capital was then complemented by education and training. Towards the end of the 20th century, technological progress, macroeconomic stability, good governance, the rule of law, transparent and well-functioning institutions, market orientation and many other factors were added. The influence of each of these factors on productivity rests on solid theoretical foundations and makes economic sense; some have strong empirical support. In addition, econometric studies show that many of these factors need to be in place simultaneously for a country to grow.[1]

This evolution of economic thinking is also reflected in the development of the index used to assess the competitiveness of nations. Since 1979, when the first Competitiveness Scorecard was published, the methodology has been regularly updated to reflect the latest thinking in economics. Ukraine was first covered in 1997 when the Competitiveness Scoreboard was still the main methodology. It was replaced in 2001 by the Growth Competitiveness Index developed by Professor Jeffrey Sachs, which served as the main instrument until 2005 when the Global Competitiveness Index (GCI), the current methodology, was introduced.

The GCI encapsulates the latest thinking on competitiveness and captures the complexity of the economic growth process by taking into account a weighted average of many different components, each of which reflects one aspect of the complex reality of competitiveness. The components are grouped into 12 different categories, called the *12 pillars of competitiveness*. The detailed structure of the GCI is presented in Annex A to this chapter.

1st pillar: Institutions

The institutional environment forms the framework within which individuals, firms and governments interact to generate income and wealth in the economy, and it therefore has a strong bearing on competitiveness and growth.[2] It plays a central role in the ways in which societies distribute the benefits and bear the costs of development strategies and policies. It also has a bearing on investment decisions and on the organization of production. Owners of land, corporate shares and intellectual property are unwilling to invest in the improvement and upkeep of their property if their rights as owners are insecure.[3] Equally importantly, if property cannot be bought and sold with the confidence that the authorities will endorse the transaction, the market itself will fail to generate dynamic growth.

But the importance of institutions is not restricted to the legal framework. Government attitudes towards markets and freedoms and the efficiency of its operations are also very important: over-regulation, excessive bureaucracy and red tape,[4] corruption, dishonesty in dealing with public contracts, lack of transparency and trustworthiness, or the political dependence of the judiciary system impose significant economic costs on businesses.

Private institutions are also important in the process of wealth creation. As the large corporate scandals that have occurred over the past few years have highlighted, accounting and reporting standards for preventing fraud and mismanagement and for maintaining investor and consumer confidence are also important ingredients in the process of wealth creation. High ethical standards in all business dealings increase the level of trust and thereby lower the cost of transactions.[5] Furthermore, transparency of business operations ensured through strict accounting standards helps prevent fraud and mismanagement.[6] These aspects are captured under the *private institutions* subpillar.

2nd pillar: Infrastructure

High-quality infrastructure is critical to ensure the efficient functioning of the economy. It is also an important factor determining the location of economic activity and the kinds of activities or sectors that can develop in an economy. As such, infrastructure is an important driver of competitiveness and it has a significant impact on economic growth in a variety of ways.[7] For example, high-quality infrastructure reduces the distance between regions, with the result of truly integrating the national market and connecting it to markets in other countries and regions.

Effective modes of transport for goods, people and services – such as roads, railroads, ports and air transport – enable entrepreneurs to get their goods to market in a secure and timely manner. It also facilitates the movement of workers around the country to the most suitable jobs. Economies depend on electricity supplies that are free of interruptions and shortages to ensure that businesses and factories can work unimpeded. Finally, a reliable and extensive telecommunications network allows for a rapid and free flow of information, which increases overall economic efficiency by helping to ensure that decisions made by economic actors take into account all available relevant information.

3rd pillar: Macroeconomic stability

It is certainly true that macroeconomic stability alone cannot increase the productivity of a nation. However, it is equally true that macroeconomic disarray seriously harms the economy.[8] The theoretical and empirical underpinnings of the relationship between a stable macroeconomy and growth have been firmly established.[9] Firms cannot make informed decisions when the inflation rate is high (typically as a result of public finances being out of control), the financial sector cannot function if the government runs huge deficits (especially if, as a result, it represses banks and it forces them to lend money at below-market interest rates), and the government cannot provide services efficiently if it has to make enormous interest payments on its past debts. In sum, the economy cannot prosper unless the macroeconomic environment is stable or favorable.

4th pillar: Health and primary education

A healthy workforce is vital to a country's competitiveness and productivity because workers who are ill cannot function to their full potential. Poor health leads to significant costs to business, as sick workers are often absent or less productive. Investment in the provision of health services is therefore critical for clear economic as well as moral considerations.[10]

In addition to health, this pillar takes into account the quantity and quality of basic education received by the population. Learning basic skills increases the efficiency of each individual worker, making the economy more productive. In addition, a workforce with little formal education can carry out basic manual work and finds it much more difficult to adapt to more advanced production processes and techniques. As a result, a lack of basic education can become a constraint on business development, with firms finding it difficult to move up the value chain by producing more sophisticated or value-added products.

5th pillar: Higher education and training

Quality higher education and training is crucial for economies that want to move up the value chain beyond simple production processes and products.[11] In particular, today's globalizing economy requires economies to nurture pools of well-educated workers who are able to adapt rapidly to their changing environment. To capture this concept, this pillar measures secondary and tertiary enrolment rates, as well as the quality of education as assessed by the business community. The importance of vocational and continuous on-the-job training, neglected in many economies, cannot be overstated as it ensures a constant upgrading of workers' skills to meet the changing needs of the production system.

6th pillar: Goods market efficiency

Countries with efficient goods markets are positioned to produce the right mix of products and services given supply and demand conditions. Such markets also ensure that these goods can be most effectively traded in the economy. Healthy market competition, both domestic and foreign, is important in driving market efficiency and thus business productivity. Such competition ensures that the most efficient firms, producing goods demanded by the market, are those that survive. To ensure the best possible environment for the exchange of goods, there must be a minimum of impediments to business activity through government intervention. For example, competitiveness is hindered by overly distortionary or burdensome taxes, and by restrictive and discriminatory rules on foreign ownership or foreign direct investment (FDI). Market efficiency also depends on demand conditions such as customer orientation and buyer sophistication.

7th pillar: Labor market efficiency

The efficiency and flexibility of the labor market are critical for ensuring that workers are allocated to their most efficient use in the economy and provided with incentives to give their best effort in their jobs. Labor markets must have the flexibility to shift workers from one economic activity to another quickly, and to allow for wage fluctuations without much social disruption. Efficient labor markets must also ensure a clear relationship between worker incentives and their efforts, as well as the best use of available talent, which includes equity in the business environment between women and men.

8th pillar: Financial market sophistication

An efficient financial sector allocates the resources saved by a nation's citizens, or those invested from abroad, to its most productive uses. A proficient financial sector channels resources to the best entrepreneurs or investment projects, rather than to the politically connected. As a result, a thorough assessment of risk is a key ingredient. A modern financial sector develops products and methods to enable innovators with good ideas to develop their business. A well-functioning financial sector needs to provide risk capital and loans, and at the same time be trustworthy and transparent. Therefore, productivity is enhanced by sophisticated financial markets that can make capital available for private-sector investment from such sources as loans from a sound banking sector, well-regulated securities exchanges and venture capital.

9th pillar: Technological readiness

This pillar measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries. This is a critical concept, as technological differences have been shown to explain much of the variation in productivity between countries. The relative importance of technology adoption for national competitiveness has been increasing in recent years, as progress in the dissemination of knowledge and the increasing use of information and communication technologies (ICT) have become increasingly widespread. Whether the technology used has or has not been invented within a country's borders is immaterial for the GCI's purposes in analyzing competitiveness. The central point is that the firms operating in the country have access to these advanced products and blueprints. This does not mean that the process of innovation is irrelevant. However, the level of technology available to firms in a country needs to be distinguished from the country's ability to innovate and expand the frontiers of knowledge. That is why technological readiness is assessed separately from innovation, which is the object of the 12th pillar.

Because ICT has evolved into a "general purpose technology" of our time,[12] ICT access and usage have become fundamental to determining economies' overall level of technological readiness, given the critical spillovers of ICT to the other economic sectors and its role as efficient infrastructure for commercial transactions. For this reason, both the penetration of ICT and the presence of an ICT-friendly regulatory framework are of key importance to a country's overall competitiveness.

10th pillar: Market size

The size of the market affects productivity because large markets allow firms to exploit economies of scale.[14] Traditionally, the markets available to firms have been constrained by a nation's borders. In the era of globalization, international markets have become a substitute for domestic markets, especially for small countries. Although little research exists on the relationship between market size and growth[15], there is vast empirical evidence that shows that trade openness is positively associated with growth. Some recent research casts doubts on the robustness of this relationship, however, it states that the effect of openness on growth is not negative.[16] In light of this striking evidence in favor of a non-negative relationship, there is a general sense that the relationship between openness and growth is likely to be positive and robust, especially for small countries with small domestic markets.[17]

This is why both domestic and foreign markets are taken into account when constructing the 10th pillar of economic competitiveness, market size. By including both domestic and foreign markets in the measure of market size, it also avoids discriminating against geographic areas such as the European Union that are broken into many countries, but have one common market.

11th pillar: Business sophistication

Business sophistication concerns the quality of a country's overall business networks, as well as the sophistication of the operations and strategies of individual firms. This is conducive to higher efficiency in the production of goods and services, leading to increased productivity and enhancing a nation's competitiveness.[18] This pillar is particularly important for economies in the innovation-driven stage of development (see below).

The quality of a country's business networks and supporting industries, which is captured through variables on the quantity and quality of local suppliers, is important for a variety of reasons. When companies and suppliers are interconnected in geographically proximate groups (clusters), efficiency is heightened, leading to greater opportunities for innovation and to reduced barriers to entry for new firms. Individual firms' operations and strategies – branding, marketing, positioning in the value chain, and the production of unique and sophisticated products – all lead to sophisticated and modern business processes, as they spill over to other companies.

12th pillar: Innovation

The last pillar of competitiveness is technological innovation. Although substantial gains can be obtained by improving institutions, building infrastructures, reducing macroeconomic instability, or improving the human capital of the population, all these factors eventually run into diminishing returns. The same is true for the efficiency of the labor, financial and goods markets. In the long run standards of living can be expanded only through technological innovation. Innovation is particularly important for more advanced economies. These tend to operate at the technology frontier, so that the possibilities of integrating and adapting exogenous technologies, as captured in the 9th pillar, technological readiness, are limited.[19]

Less advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas. However, for countries that have reached the innovation stage of development, this is no longer sufficient. Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive edge. This requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. In particular, this entails sufficient investment in research and development, especially by the business sector; high-quality scientific research institutions; collaboration in research between universities and industry; and the protection of intellectual property.

1.2 Competitiveness and the stages of economic development

The first tenet on which the GCI is founded is that the determinants of competitiveness are many, complex, and open-ended. The second is that each pillar affects various countries differently; the best way for Zimbabwe to improve its competitiveness does not hold true for Finland. As countries move along the development path, wages tend to increase, and to sustain this higher income labor productivity must improve.

The GCI adapts Michael Porter's definition of stages.[20] In the first stage, the economy is factor-driven and countries compete based on their factor endowments, primarily unskilled labor and natural resources. Companies compete on the basis of price and sell basic products or commodities, with their low productivity reflected in low wages. Maintaining competitiveness at this stage of development hinges primarily on well-functioning public and private institutions (1st pillar), appropriate infrastructure (2nd pillar), a stable macroeconomic framework (3rd pillar), and a healthy and literate workforce (4th pillar).

As wages rise with advancing development, countries move into the efficiency-driven stage of development, when they must begin to develop more efficient production processes and increase product quality. At this point, competitiveness is increasingly driven by higher education and training (5th pillar), efficient goods markets (6th pillar), well-functioning labor markets (7th pillar), sophisticated financial markets (8th pillar), the ability to harness the benefits of existing technologies (9th pillar), and a large domestic or foreign market (10th pillar).

Finally, as countries move into the innovation-driven stage, they are able to sustain higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. At this stage,

Figure 1.1 The 12 pillars of competitiveness

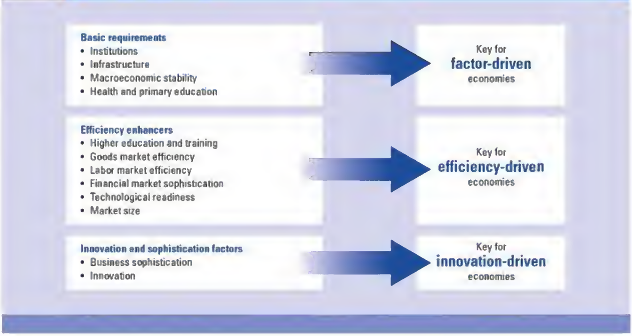

Basic requirements
• Institutions
• Infrastructure
• Macroeconomic stability
• Health and primary education
Key for
factor-driven
economies
Efficiency enhancers
• Higher education and training
• Goods market efficiency
• Labor market efficiency
• Financial market sophistication
• Technological readiness
• Market size
Key for
efficiency-driven
economies
Innovation and sophistication factors
• Business sophistication
• Innovation
Key for
innovation-driven
economies

Table 1.1 Weights of the three main groups of pillars at each stage of development

Subindex	Factor-driven stage (%)	Efficiency-driven stage (%)	Innovation-driven stage (%)
Basic requirements	60	40	20
Efficiency enhancers	35	50	50
Innovation and sophistication factors	5	10	30

companies must compete through innovation (12th pillar), and producing new and different goods using the most sophisticated production processes (11th pillar).

The concept of stages of development is integrated into the GCI by attributing higher relative weights to those pillars that are relatively more relevant for a country given its particular stage of development. That is, although all 12 pillars matter to a certain extent for all countries, the importance of each one depends on a country's stage of development. To take this into account, the pillars are organized into three subindexes, each critical to a particular stage of development. The basic requirements subindex groups those pillars most critical for countries in the factor-driven stage. The efficiency enhancers subindex includes those pillars critical for countries in the efficiency-driven stage. The innovation and sophistication factors subindex includes all pillars critical to countries in the innovation-driven stage. The three subindexes are shown in Figure 1.1.

The specific weights attributed to each subindex in every stage of development are shown in Table 1.1. To obtain the precise weights attributed to each subindex in the overall GCI, a maximum likelihood regression of GDP per capita was run against each subindex for past years, allowing for different coefficients for each stage of development. The rounding of these econometric estimates led to the choice of weights displayed in Table 1.1.

Table 1.2 Income thresholds for establishing stages of development

Stage of development	GDP per capita (US$)
Stage 1: Factor-driven	< 2,000
Transition from stage 1 to stage 2	2,000 -3,000
Stage 2: Efficiency-driven	3,000-9,000
Transition from stage 2 to stage 3	9,000-17,000
Stage 3: Innovation-driven	> 17,000

Countries are allocated to stages of development based on two criteria. The first is the level of GDP per capita at market exchange rates. This widely available measure is used as a proxy for wages, as internationally comparable data for the latter are not available for all countries covered. Table 1.2 shows the GDP per capita thresholds for the three main stages of developments and for the two transition phases. The second measures the extent to which countries are resource-based. We proxy this by the share of exports of primary goods in total exports (goods and services) and assume that countries that export more than 70% of primary products are to a large extent resource-based.[21]

Countries falling in between two of the three stages are considered to be "in transition". For these countries, the weights change smoothly as a country develops, reflecting the smooth transition from one stage of development to

Table 1.3 Classification of selected countries into stages of development

Stage	Comparator countries	Other countries in this stage	Important areas for competitiveness
Stage 1 (factor-driven)	India	Armenia, Egypt, Kyrgyz Republic, Moldova, Philippines, Tajikistan, Uzbekistan	Basic requirements (critical) and efficiency enhancers (very important)
Transition from 1 to 2	China, Colombia, Azerbaijan, Kazakhstan, **Ukraine**	Albania, Bosnia and Herzegovina, Tunisia, Venezuela	Basic requirements (critical) and efficiency enhancers (increasingly important)
Stage 2 (efficiency-driven)	Argentina, Brazil, Chile, Lithuania, Mexico, Poland, Romania, Russian Federation, Turkey	Bulgaria, Latvia, Peru, Serbia, South Africa, Thailand, Uruguay	Basic requirements (very important) and efficiency enhancers (critical)
Transition from 2 to 3	Estonia	Czech Republic, Hungary, Slovak Republic, Taiwan, China	Same as above, but innovation factors become increasingly important
Stage 3 (innovation-driven)	United States	Germany, France, Ireland, Israel, Japan, Korea, Spain, Sweden	All three areas important: basic requirements, efficiency enhancers and innovation factors

another. By introducing this type of transition between stages into the model – by placing increasingly more weight on those areas that are becoming more important for the country's competitiveness as the country develops – the GCI can gradually "penalize" those countries that are not preparing for the next stage and reward those that are doing so. The classification into stages of development of comparator countries used in Chapter 2 of this report and other selected economies is shown in Table 1.3.

1.3 The Executive Opinion Survey

Two types of data enter the GCI. The actual percentage varies as a function of the stage of development; however, about 35% of the variables are composed of hard data from publicly available statistical sources that ensure international comparability, such as the World Bank or the International Monetary Fund. The remaining indicators come from the results of the World Economic Forum's annual Executive Opinion Survey (Survey).

The aim of the Survey is to capture the qualitative dimension of specific aspects of competitiveness and to provide comparable data for all countries covered by the report on issues for which there are no existing hard data indicators. This highly specialized survey is conducted annually by the World Economic Forum in all countries covered by the report. Business leaders are asked to assess specific aspects of the business environment in the country in which they operate. As described in Box 1.2, for each Survey question, respondents are asked to give their opinion about the situation in their country of residence, compared with a global norm.

To ensure that the Survey is conducted thoroughly and consistently across the 131 countries, the World Economic Forum has established collaborative partnerships with a network of Partner Institutes based in each country covered by the report. Typically, the Partner Institutes are recognized economics departments of national universities, independent research institutes, or business organizations. In Ukraine, the Centre for Social and Economic Research Ukraine (CASE) is the Forum's Partner Institute.

To ensure that the sample is selected consistently around the world, a detailed set of guidelines has been developed by the Forum for the Partner Institutes, to target top management business executives, with a particular focus on surveying the most sizeable employers. In addition to relying on Partner Institutes to collect surveys in their respective countries, the Forum's member and partner companies are also invited to participate in the Survey. A detailed breakdown of the Ukrainian sample over the past two years is given in Table 1.4.

Sample sizes vary according to the size of the economy. In 2007, a record total of 11,406 responses were used in the final GCI calculations, up from 11,232 in 2006. In recent years, the number of surveys per country averaged 90 with higher numbers for larger countries.

Table 1.4 Distribution of respondents to the Executive Opinion Survey in Ukraine by firm size in 2006 and 2007

Edition	Sample size	<101 (%)	101-1,000 (%)	1,001-5,000 (%)	5001-20,000 (%)	> 20,000 (%)	No response (%)
2006	159	72	19	4	1	3	1
2007	84	33	44	18	2	0	2

Box 1.2 Example of a typical Executive Opinion Survey question

Most questions follow the same structure, asking participants to evaluate, on scale of 1 to 7, the current condition of various aspects of their particular operating environment. At one end of the scale, 1 represents the worst possible operating condition or situation, and at the other end of the scale, 7 represents the best. For example:

Intellectual property protection in your country:

Is weak and not enforced	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Is strong and enforced**

Circling 1:	means you agree completely with the answer on the left-hand side
Circling 2:	means you largely agree with the left-hand side
Circling 3:	means you somewhat agree with the left-hand side
Circling 4:	means your opinion is indifferent between the two answers
Circling 5:	means you somewhat agree with the right-hand side
Circling 6:	means you largely agree with the right-hand side
Circling 7:	means you agree completely with the answer on the right-hand side

Box 1.3 Cleaning up the Executive Opinion Survey dataset

Prior to the computation of country scores, the Survey dataset undergoes a thorough verification process aimed at excluding obvious outlying responses and responses from very small companies (which might be less able to compare their operating environment to a global standard), based upon a set of exclusion criteria.

A questionnaire is excluded from a country's sample if:

- the count of 1 (i.e., the number of questions in the questionnaire to which the respondent answered 1) exceeds the average count of 1 in the respondent's country by more than three standard deviations. A similar rule applies for the count of 7;
- the count of one particular intermediate answer (2, 3, 4, 5, or 6) represents more than 85% of all answers;
- the average score across the entire questionnaire departs from the country average score across all questionnaires by more than three standard deviations;
- the respondent works for a company with a staff of fewer than 100 employees and revenues of less than US$ 10,000 in the respondent's country; and
- the completion rate is 50% or less.

For Ukraine, the sample consisted of 84 companies in 2007 and 159 in 2006.

Once the data is entered, it is subjected to a rigorous quality control process. Following a careful verification of the Survey dataset (see Box 1.3), individual responses to each question are then aggregated at the country level to produce country scores for each question. Country scores are used in the computation of the Global Competitiveness Index, together with the hard data indicators.

The country scores are computed using a moving average, which consists of taking a weighted average of the most recent year's Survey results together with a discounted average of the previous year.

There are several reasons for doing this. First, it makes the results less sensitive to the specific point in time when the Survey is administered, thus reducing variations in the results due to current developments in the country from one year to another. Second, it increases the amount of available information by providing a larger sample size. Third, it is a better approximation of the average sentiment of the business community throughout the year. Because the Survey is carried out during the first quarter of the year, the average of the responses in the first quarter of 2006 and first quarter 2007 is a better measure of the sentiment of the whole year than the measures of just the first quarter of 2007. As a result, this weighted average better aligns the Survey data with many of the hard data indicators, which are year-average data.

To calculate the moving average, a weighting scheme is used composed of two overlapping elements. On one hand, we want to give each response an equal weight and, therefore, place more weight on the year with the larger sample size. At the same time, we would like to give more

Box 1.4 Country score calculation

For any given Survey question, q_i, country c's score, $q_{i,c}^{2006-2007}$, is given by:

$$q_{i,c}^{2006-2007} = w_c^{2006} \cdot q_{i,c}^{2006} + w_c^{2007} \cdot q_{i,c}^{2007} \quad (1)$$

where

$q_{i,c}^{T}$ is country c's score on question q_i in year T, with $T = 2006, 2007$ (see equation (2) below);

$q_{i,n,c}^{T}$ is respondent n's response (on a 1 to 7 scale) to question q_i in year T;

N_c^T is the sample size (i.e., the number of respondents) for country c in year T; and

w_c^T is the weight applied to country c's score in year T (see below).

Country c's score for year T is computed as follows:

$$q_{i,c}^{T} = \frac{\sum_{n=1}^{N_c^T} q_{i,n,c}^{T}}{N_c^T} \quad (2)$$

The weights for each year are determined as follows:

$$w_c^{2006} = \frac{(1-\alpha) + \dfrac{N_c^{2006}}{N_c^{2006}+N_c^{2007}}}{2} \quad (3a)$$

and

$$w_c^{2007} = \frac{\alpha + \dfrac{N_c^{2007}}{N_c^{2006}+N_c^{2007}}}{2}. \quad (3b)$$

Plugging equations (3a) and (3b) into (1) and rearranging yields:

$$q_{i,c}^{2006-2007} = \frac{1}{2} \cdot \underbrace{\left[(1-\alpha) \cdot q_{i,c}^{2006} + \alpha \cdot q_{i,c}^{2007}\right]}_{\text{discounted past weighted average}} + \frac{1}{2} \cdot \underbrace{\left[\frac{N_c^{2006}}{N_c^{2006}+N_c^{2007}} \cdot q_{i,c}^{2006} + \frac{N_c^{2007}}{N_c^{2006}+N_c^{2007}} \cdot q_{i,c}^{2007}\right]}_{\text{sample size weighted average}} \quad (4)$$

In equation (4), the first component of the weighting scheme is the discounted-past weighted average. The second component is the sample-size weighted average. The two components are given a half-weight each. The value for α is 0.6, which corresponds to a discount factor of 2/3. That is, the 2006 score of country c is given 2/3 of the weight given to its 2007 score. One additional property of this approach is that it prevents a country sample that is much larger in one year from overwhelming the smaller sample from the other year.

An example

For the sake of concreteness and clarity, we compute the score of Ukraine on indicator 1.01 on the protection of property rights, which is part of the 1st pillar of the GCI.

Using formula (2) above, we compute Ukraine's score for each year: 3.37 in 2006 and 3.21 in 2007. The weighting scheme described above serves to define how these two scores are combined. In Ukraine, the size of the sample was 159 in 2006 and 84 in 2007. Using α=0.6 and applying formulas (3a) and (3b) yield weights of 52.7% for 2006 and 47.3% for 2007. The final country score for this question is given by formula (1):

$\underbrace{.527 \cdot 3.37}_{2006} + \underbrace{.473 \cdot 3.21}_{2007} = 3.29$. This is the score used in calculating the GCI.

Although numbers were rounded to two decimal places in this example, exact figures were used in the actual calculation.

weight to the most recent responses because they contain more updated information. That is, we also "discount the past". The methodology for computing country scores and a clarifying example are presented in Box 1.4.

1.4 Conclusions

This chapter presented an overview of the Global Competitiveness Index, the World Economic Forum's main methodology for assessing competitiveness, which will serve as the main vehicle for assessing Ukraine's competitiveness in this report. The GCI captures what government and business leaders have known for a long time. Competitiveness is a complex phenomenon and the overall level of competitiveness of a nation can be improved only through a wide array of reforms in different areas. The GCI also highlights the fact that the priorities are different for different countries, depending on their level of development.

The GCI is an instrument that can be used to identify the competitive strengths of a country, as well as the barriers to its economic progress. It can also be used to establish comparisons with neighboring countries and the relative position in the overall rankings a particular country holds. Policymakers should also pay attention to the relative scores for each of the subcategories for each of the pillars. The GCI is constructed by combining hard data with the opinions of the top business leaders answering the Executive Opinion Survey questions. As a result, the relative scores of the various subcategories of the GCI provide useful information as to what the priorities for reform should be, both from the cold reality of the hard data and from the point of view of the business community that is currently operating in the country.

Notes

1 See, for example, Sala-i-Martin, Doppelhofer, and Miller 2004 for an extensive list of potentially robust determinants of economic growth.

2 See Acemoglu, Johnson and Robinson 2001, 2002; Rodrik, Subramanian, and Trebbi 2002; and Sala-i-Martin and Subramanian 2003.

3 See de Soto 2000.

4 See de Soto and Abbot 1990.

5 See Shleifer and Vishny 1997; Zingales 1998.

6 See Kaufmann and Vishwanath 2001.

7 See Gramlich 1994; Aschauer 1989; Canning, Fay and Perotti 1994; and Easterly 2002.

8 See Fischer 1993.

9 See for example Fisher 1993.

10 See Sachs 2001.

11 See Schultz 1961, Becker 1993; Lucas 1988, and Kremer 1993.

12 See Aghion and Howitt 1992 and Barro and Sala-i-Martin 2003 for a technical exposition of technology-based growth theories.

13 A general purpose technology (GPT), according to Trajtenberg 2005, is one which in any given period makes a particular contribution to the overall economy's growth thanks to its ability to transform the methods of production in a wide array of industries. Examples of past GPTs are the invention of the steam engine and the electric dynamo.

14 At least in some industries there is microeconomic evidence that economies of scale lead to productivity increase.

15 For an overview, see Alesina, Spolaore and Wacziarg 2005.

16 See Frenkel and Romer 1999; Rodrik and Rodriguez 1999, and Sachs and Warner 1995.

17 See Alesina, Spolaore and Wacziarg 2005.

18 See Porter 1990. A recent study at the London School of Economics has shown that differences in the quality of management among firms explain variations in their productivity, see Bloom and van Reenen 2007.

19 See Romer 1990; Aghion and Howitt 1992, and Grossman and Helpman 1991.

20 Probably the most famous theory of stages of development was developed by the American historian W.W. Rostow in the 1960s.

21 To capture the resource intensity of the economy, we use as a proxy the exports of mineral products as a share of overall exports according to the sector classification developed by the International Trade Centre in its Trade Performance Index. In addition to crude oil and gas, this category also contains all metal ores and other minerals, as well as petroleum products, liquefied gas, coal, and precious stones. Further information on these data can be found at http://www.intracen.org/menus/countries.htm.

All countries that export more than 70% of mineral products are considered to be to some extent resource-based. The stage of development for these countries is adjusted downward smoothly depending on the exact primary export share. The higher the minerals export share, the stronger the adjustment and the closer the country will move to stage 1. For example, a country with 95% or more of its exports in minerals and that, based on the income criteria, would be in stage 3, will be in transition between stages 1 and 2. The income and primary exports criteria are weighted identically. Stages of development are dictated uniquely by income for countries that export less than 70% minerals. Countries that export only primary products would automatically fall into the factor-driven stage (stage 1).

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Annex A: Structure of the Global Competitiveness Index 2007-2008

This appendix details the structure of the Global Competitiveness Index 2007–2008 (GCI) introduced in Chapter 1, and provides notes on its computation. Appendix B provides detailed information on all of the indicators comprising the GCI.

The percentage next to each category represents the category's weight within its immediate parent category. The computation of the GCI is based on successive aggregations of scores, from the variable level (i.e., the lowest level) all the way up to the overall GCI score (i.e., the highest level), using the weights reported in the chapter. For example, the score a country achieves in the 9th pillar accounts for 17% of this country's score in the efficiency enhancers subindex. Similarly, the score achieved on the networks and supporting industries subpillar accounts for 50% of the score of the 11th pillar. Reported percentages are rounded to the nearest integer, but exact figures are used in the calculation of the GCI.

The weight of each of the three subindexes (basic requirements, efficiency enhancers, and innovation and business sophistication factors) depends on each country's stage of development, as discussed in the chapter.[a]

The hard data indicators used in the GCI are normalized on a 1 to 7 scale in order to align them with the Executive Opinion Survey's results.[b]

Those variables that are followed by the symbol $^{1/2}$ enter the GCI in two different places. To avoid double counting, we give them a half-weight in each place by dividing their value by 2 when computing the aggregate score for the two categories in which they appear.[c]

Basic requirements

Weight (%) within immediate parent category

1st pillar: Institutions 25%

A. Public institutions 75%

- 1. Property rights 20%
  - 1.01 Property rights
  - 1.02 Intellectual property protection$^{1/2}$
- 2. Ethics and corruption 20%
  - 1.03 Diversion of public funds
  - 1.04 Public trust of politicians
- 3. Undue influence 20%
  - 1.05 Judicial independence
  - 1.06 Favoritism in decisions of government officials
- 4. Government inefficiency 20%
  - 1.07 Wastefulness of government spending
  - 1.08 Burden of government regulation
  - 1.09 Efficiency of legal framework
  - 1.10 Transparency of government policymaking
- 5. Security 20%
  - 1.11 Business costs of terrorism
  - 1.12 Business costs of crime and violence
  - 1.13 Organized crime
  - 1.14 Reliability of police services

B. Private institutions 25%

- 1. Corporate ethics 50%
  - 1.15 Ethical behavior of firms
- 2. Accountability 50%
  - 1.16 Strength of auditing and reporting standards
  - 1.17 Efficacy of corporate boards
  - 1.18 Protection of minority shareholders' interests

2nd pillar: Infrastructure 25%

A. General infrastructure 50%

- 2.01 Quality of overall infrastructure

B. Specific infrastructure 50%

- 2.02 Quality of roads
- 2.03 Quality of railroad infrastructure
- 2.04 Quality of port infrastructure
- 2.05 Quality of air transport infrastructure
- 2.06 Available seat kilometers (hard data)
- 2.07 Quality of electricity supply
- 2.08 Telephone lines (hard data)

3rd pillar: Macroeconomic stability 25%

- 3.01 Government surplus/deficit (hard data)
- 3.02 National savings rate (hard data)
- 3.03 Inflation (hard data)[d]
- 3.04 Interest rate spread (hard data)
- 3.05 Government debt (hard data)

4th pillar: Health and primary education 25%

A. Health 50%

- 4.01 Business impact of malaria[e]
- 4.02 Malaria incidence (hard data)[e]
- 4.03 Business impact of tuberculosis[e]
- 4.04 Tuberculosis incidence (hard data)[e]
- 4.05 Business impact of HIV/AIDS[e]
- 4.06 HIV prevalence (hard data)
- 4.07 Infant mortality (hard data)
- 4.08 Life expectancy (hard data)

B. Primary education 50%

- 4.09 Quality of primary education
- 4.10 Primary enrolment (hard data)
- 4.11 Education expenditure (hard data)$^{1/2}$

Efficiency enhancers

5th pillar: Higher education and training 17%

A. Quantity of education 33%

- 5.01 Secondary enrolment (hard data)
- 5.02 Tertiary enrolment (hard data)
- 4.11 Education expenditure (hard data)$^{1/2}$

B. Quality of education 33%

- 5.03 Quality of the educational system
- 5.04 Quality of math and science education
- 5.05 Quality of management schools
- 5.06 Internet access in schools

C. On-the-job training 33%

- 5.07 Local availability of specialized research and training services
- 5.08 Extent of staff training

6th pillar: Goods market efficiency 17%

A. Competition 67%

- 1. Domestic competition .... variable[f]
  - 6.01 Intensity of local competition
  - 6.02 Extent of market dominance
  - 6.03 Effectiveness of anti-monopoly policy
  - 6.04 Extent and effect of taxation$^{1/2}$
  - 6.05 Total tax rate (hard data)$^{1/2}$
  - 6.06 Number of procedures required to start a business (hard data)[g]
  - 6.07 Time required to start a business (hard data)[g]
  - 6.08 Agricultural policy costs
- 2. Foreign competition .... variable[f]
  - 6.09 Prevalence of trade barriers

6.10 Trade-weighted tariff rate (hard data)
6.11 Prevalence of foreign ownership
6.12 Business impact of rules on FDI
6.13 Burden of customs procedures
10.04 Imports as a percentage of GDP (hard data)

B. Quality of demand conditions 33%
6.14 Degree of customer orientation
6.15 Buyer sophistication

7th pillar: Labor market efficiency 17%

A. Flexibility 50%
7.01 Cooperation in labor-employer relations
7.02 Flexibility of wage determination
7.03 Non-wage labor costs (hard data)
7.04 Rigidity of employment (hard data)
7.05 Hiring and firing practices
6.04 Extent and effect of taxation$^{1/2}$
6.05 Total tax rate (hard data)$^{1/2}$
7.06 Firing costs (hard data)

B. Efficient use of talent 50%
7.07 Pay and productivity
7.08 Reliance on professional management$^{1/2}$
7.09 Brain drain
7.10 Female participation in labor force (hard data)

8th pillar: Financial market sophistication 17%

A. Efficiency 50%
8.01 Financial market sophistication
8.02 Financing through local equity market
8.03 Ease of access to loans
8.04 Venture capital availability
8.05 Restriction on capital flows
8.06 Strength of investor protection (hard data)

B. Trustworthiness and confidence 50%
8.07 Soundness of banks
8.08 Regulation of securities exchanges
8.09 Legal rights index (hard data)

9th pillar: Technological readiness 17%

9.01 Availability of latest technologies
9.02 Firm-level technology absorption
9.03 Laws relating to ICT
9.04 FDI and technology transfer
9.05 Mobile telephone subscribers (hard data)
9.06 Internet users (hard data)
9.07 Personal computers (hard data)
9.08 Broadband Internet subscribers (hard data)

10th pillar: Market size 17%

A. Domestic market size 75%
10.01 Domestic market size index (hard data)[h]

B. Foreign market size 25%
10.02 Foreign market size index (hard data)[i]

Innovation and sophistication factors

11th pillar: Business sophistication 50%

A. Networks and supporting industries 50%
11.01 Local supplier quantity
11.02 Local supplier quality
11.03 State of cluster development

B. Sophistication of firms' operations and strategy 50%
11.04 Nature of competitive advantage
11.05 Value chain breadth
11.06 Control of international distribution
11.07 Production process sophistication
11.08 Extent of marketing
11.09 Willingness to delegate authority
7.08 Reliance on professional management$^{1/2}$

12th pillar: Innovation 50%

12.01 Capacity for innovation
12.02 Quality of scientific research institutions
12.03 Company spending on R&D
12.04 University-industry research collaboration
12.05 Government procurement of advanced technology products
12.06 Availability of scientists and engineers
12.07 Utility patents (hard data)
1.02 Intellectual property protection$^{1/2}$

Notes:

a The standard formula for converting hard data is the following

$$6 \times \frac{(\text{country score} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 1$$

The sample minimum and sample maximum are, respectively, the lowest and highest country scores in the sample of countries covered by the GCI. In some instances, adjustments were made to account for extreme outliers. For those hard data variables for which a higher value indicates a worse outcome (e.g. disease incidence, government debt), we rely on a normalization formula that, in addition to converting the series to a 1 to 7 scale, reverses it, so that 1 and 7 still corresponds to the worst and best possible outcomes, respectively:

$$-6 \times \frac{(\text{country score} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 7$$

b. As described in the chapter, the weights are the following:

Weights	Factor-driven stage (%)	Efficiency-driven stage (%)	Innovation-driven stage (%)
Basic requirements	60	40	20
Efficiency enhancers	35	50	50
Innovation factors	5	10	30

c For those groups of variables that contain one or several half weight variables, country scores for those groups are computed as follows:

$$\frac{(\text{sum of scores on full-weight variables}) + \frac{1}{2} \times (\text{sum of scores on half-weight variables})}{(\text{count of full-weight variables}) - \frac{1}{2} \times (\text{count of half-weight variables})}$$

d In order to capture the idea that both high inflation and deflation are detrimental, inflation enters the model in a U shaped manner as follows: for values of inflation between 0.5 and 2.9%, a country receives the highest possible score of 7. Outside this range, scores decrease linearly as they move away from these values.

e. The impact of malaria, tuberculosis, and HIV/AIDS on competitiveness depends not only on their respective incidence rates, but also on how costly they are for business. Therefore, in order to estimate the impact of each of the three diseases, we combine its incidence rate with the survey question on its perceived cost to businesses. To combine these data we first take the ratio of each country's disease incidence rate relative to the highest incidence rate in the whole sample. The inverse of this ratio is then multiplied by each country's score on the related survey question. This product is then normalized to a 1 to 7 scale. Note that countries with zero reported incidence receive a 7, regardless of their scores on the related survey question.

f The competition subpillar is the weighted average of two components: domestic competition and foreign competition. In both components, the included variables provide an indication of the extent to which competition is distorted. The relative importance of these distortions depends on the relative size of domestic versus foreign competition. This interaction between the domestic market and the foreign market is captured by the way we determine the weights of the two components. Domestic competition is the sum of consumption (C), investment (I), government spending (G), and exports (X), while foreign competition is equal to imports (M). Thus we assign a weight of (C+I+G+X)/(C+I+G+X+M) to domestic competition, and a weight of M/(C+I+G+X+M) to foreign competition.

g. Variables 6.06 and 6.07 combine to form one single variable.

h. The size of the domestic market is constructed by taking the natural log of the sum of the gross domestic product valued at PPP plus the total value (PPP estimates) of imports of goods and services, minus the total value (PPP estimates) of exports of goods and services. Data are then normalized on a 1 to 7 scale. PPP estimates of imports and exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. The underlying data are reported in the Data Tables section of *The Global Competitiveness Report 2007-2008*.

i. The size of the foreign market is estimated as the natural log of the total value (PPP estimates) of exports of goods and services, normalized on a 1 to 7 scale. PPP estimates of exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. The underlying data are reported in the Data Tables section of *The Global Competitiveness Report 2007-2008*.

Annex B: The Global Competitiveness Index 2007–2008 data

The following section provides detailed information, including computation methods and sources, on all the indicators that enter the Global Competitiveness Index 2007–2008 (GCI).

For each indicator, the title appears on the first line, preceded by its number to allow for quick reference. The numbering is the same as the one used in Appendix A. Underneath is a description of the indicator or, in the case of Executive Opinion Survey data, the full question and associated answers. If necessary, additional information is provided underneath. For the hard data indicators, the data used for the GCI represent the best available estimates from various international agencies, private sources, and national authorities at the time the index was computed. It is possible that some data will have been updated or revised after publication.

1.01 Property rights

Property rights, including over financial assets (1 = are poorly defined and not protected by law, 7 = are clearly defined and well protected by law)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.02 Intellectual property protection

Intellectual property protection in your country (1 = is weak and not enforced; 7 = is strong and enforced)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.03 Diversion of public funds

In your country, diversion of public funds to companies, individuals, or groups due to corruption (1 = is common, 7 = never occurs)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.04 Public trust of politicians

Public trust in the financial honesty of politicians is (1 = very low, 7 = very high)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.05 Judicial independence

Is the judiciary in your country independent from political influences of members of government, citizens, or firms? (1 = no – heavily influenced, 7 = yes – entirely independent)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.06 Favoritism in decisions of government officials

When deciding upon policies and contracts, government officials (1 = usually favor well-connected firms and individuals, 7 = are neutral)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.07 Wastefulness of government spending

Public spending in your country (1 = is wasteful, 7 = provides necessary goods and services not provided by the market)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.08 Burden of government regulation

Complying with administrative requirements (permits, regulations, reporting) issued by the government in your country is (1 = burdensome, 7 = not burdensome)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007

1.09 Efficiency of legal framework

The legal framework in your country for private businesses to settle disputes and challenge the legality of government actions and/or regulations (1 = is inefficient and subject to manipulation, 7 = is efficient and follows a clear, neutral process)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.10 Transparency of government policymaking

Are firms in your country usually informed clearly by the government on changes in policies and regulations affecting your industry? (1 = never informed; 7 = always informed)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.11 Business costs of terrorism

The threat of terrorism in your country (1 = imposes significant costs on business, 7 = does not impose significant costs on business)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.12 Business costs of crime and violence

The incidence of common crime and violence (e.g., street muggings, firms being looted) (1 = imposes significant costs on businesses, 7 = does not impose significant costs on businesses)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.13 Organized crime

Organized crime, such as mafia-oriented racketeering, extortion in your country (1 = imposes significant costs on businesses, 7 = does not impose significant costs on businesses)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.14 Reliability of police services

Police services (1 = cannot be relied upon to protect businesses from criminals, 7 = can be relied upon to protect businesses from criminals)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.15 Ethical behavior of firms

The corporate ethics (ethical behavior in interactions with public officials, politicians, and other enterprises) of firms in your country are (1 = among the world's worst, 7 = among the best in the world)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.16 Strength of auditing and reporting standards

Financial auditing and reporting standards regarding company financial performance in your country are (1 = extremely weak, 7 = extremely strong, the best in the world)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.17 Efficacy of corporate boards

Corporate governance by investors and boards of directors in your country is characterized by (1 = management has little accountability, 7 = investors and boards exert strong supervision of management decisions)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

1.18 Protection of minority shareholders' interests

Interests of minority shareholders in your country are (1 = not protected by law and seldom recognized by majority shareholders, 7 = protected by law and actively enforced)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.01 Quality of overall infrastructure

General infrastructure in your country is (1 = underdeveloped, 7 = as extensive and efficient as the world's best)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.02 Quality of roads

Roads in your country are (1 = underdeveloped, 7 = extensive and efficient by international standards)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.03 Quality of railroad infrastructure

Railroads in your country are (1 = underdeveloped, 7 = as extensive and efficient as the world's best)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.04 Quality of port infrastructure

*Port facilities and inland waterways in your country are (1 = underdeveloped, 7 = as developed as the world's best) | * For landlocked countries, this measures the ease of access to port facilities and inland waterways. | 2007*

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.05 Quality of air transport infrastructure

Passenger air transport in your country is (1 = infrequent, limited, and inefficient, 7 = as frequent, extensive, and efficient as the world's best)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.06 Available seat kilometers (hard data)

Scheduled available seat kilometers per week originating in country (in millions) | January 2007 and July 2007 average

This variable measures an airline's passenger-carrying capacity; it is composed of the number of seats available on each flight multiplied by the flight distance in kilometers. The resulting variable is an average of the total for all scheduled flights in a week during January (winter schedule) and July (summer schedule) 2007.

Source: International Air Transport Association, SRS Analyser.

2.07 Quality of electricity supply

The quality of electricity supply in your country (lack of interruptions and lack of voltage fluctuations) is (1 = worse than in most other countries, 7 = meets the highest standards in the world)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

2.08 Telephone lines (hard data)

Main telephone lines per 100 population | 2005

A main telephone line is a telephone line connecting the subscriber's terminal equipment to the public switched telephone network and that has a dedicated port in the telephone exchange equipment.

Source: International Telecommunication Union, World Telecommunication Indicators 2006; national sources

3.01 Government surplus/deficit (hard data)

Central government gross surplus/deficit as a percentage of GDP | 2006

Source: IMF, *World Economic Outlook Database* (April 2007); IMF country reports; European Central Bank; European Bank for Reconstruction and Development; African Development Bank; Economist Intelligence Unit, *CountryData Database* (June 2007); national sources

3.02 National savings rate (hard data)

National savings rate as a percentage of GDP | 2006

Source: IMF, *World Economic Outlook Database* (April 2007); Economist Intelligence Unit, *CountryData Database* (June 2007).

3.03 Inflation (hard data)

Annual percent change in consumer price index | 2006 average

Source: IMF, *World Economic Outlook Database* (April 2007); national sources.

3.04 Interest rate spread (hard data)

Average interest rate spread (difference between typical lending and deposit rates) | 2006

This measures the difference between the typical short-term lending and deposit rates

Source: IMF, International Financial Statistics; Economist Intelligence Unit, *CountryData Database* (June 2007); national sources.

3.05 Government debt (hard data)

Government gross debt as a percentage of GDP | 2006

Source: IMF, *World Economic Outlook Database* (April 2007); IMF country reports; OECD, *OECD Economic Outlook* no. 81 (May 2007); European Central Bank; European Bank for Reconstruction and Development; Economist Intelligence Unit, *CountryData Database* (June 2007); national sources.

4.01 Business impact of malaria

How serious do you consider the future impact of malaria on your company in the next 5 years? (1 = extremely serious, 7 = not a problem)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

4.02 Malaria incidence (hard data)

Number of malaria cases per 100,000 population | 2004

Source: World Health Organization and UNICEF, *World Malaria Report 2005*; World Health Organization Regional Offices, UNFPA, *State of World Population 2006*; The World Bank, *World Development Indicators 2007*; UNDP, *Human Development Report 2006*; national sources.

4.03 Business impact of tuberculosis

How serious do you consider the future impact of tuberculosis on your company in the next 5 years? (1 = extremely serious, 7 = not a problem)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

4.04 Tuberculosis incidence (hard data)

Number of tuberculosis cases per 100,000 population | 2005

Source: World Health Organization, *Global Tuberculosis Control Report 2007*; national sources

4.05 Business impact of HIV/AIDS

How serious do you consider the future impact of HIV/AIDS on your company in the next 5 years? (1 = extremely serious, 7 = not a problem)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

4.06 HIV prevalence (hard data)

HIV prevalence as a percentage of adults aged 15–49 years | 2005

Source: UNAIDS, *2006 Report on the Global AIDS Epidemic*; UNDP, *Human Development Report 2006*; national sources.

4.07 Infant mortality (hard data)

Infant (children aged 0–12 months) mortality per 1,000 live births | 2004

Source: World Health Organization, *World Health Statistics 2006*, *The World Health Report*; UNFPA, State of World Population 2006; national sources.

4.08 Life expectancy (hard data)

Life expectancy at birth (years) | 2004

Source: World Health Organization, *World Health Report 2006*; The World Bank, *World Development Indicators 2007*; national sources

4.09 Quality of primary education

The primary schools in your country are (1 = of poor quality, 7 = equal to the best in the world)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

4.10 Primary enrolment (hard data)

Net primary education enrolment rate | 2005

According to the World Bank's World Development Indicators, this corresponds to the ratio of children of official school age (as defined by the national education system) who are enroled in school to the population of the corresponding official school age. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.

Source: UNESCO Institute for Statistics (June 2007); The World Bank, *World Development Indicators 2007*; national sources.

4.11 Education expenditure (hard data)

Adjusted savings: Education expenditure as percentage of GNI | 2005

Current operating expenditures in education, including wages and salaries and excluding capital investments in buildings and equipment.

Source: The World Bank, *World Development Indicators 2007*.

5.01 Secondary enrolment (hard data)

Gross secondary enrolment rate | 2005

According to the World Bank's World Development Indicators, this corresponds to the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the secondary education level. Secondary education completes the provision of basic education that began at the primary level, and aims at laying the foundations for lifelong learning and human development, by offering more subject- or skill-oriented instruction using more specialized teachers.

Source: UNESCO Institute for Statistics (June 2007), The World Bank, *World Development Indicators 2007*, national sources.

5.02 Tertiary enrolment (hard data)

Gross tertiary enrolment rate | 2004

According to the World Bank's World Development Indicators, this corresponds to the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the tertiary education level. Tertiary education, whether or not leading to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level.

Source: UNESCO Institute for Statistics (June 2007); The World Bank, *World Development Indicators 2007*, national sources.

5.03 Quality of the educational system

The educational system in your country (1 = does not meet the needs of a competitive economy, 7 = meets the needs of a competitive economy)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

5.04 Quality of math and science education

Math and science education in your country's schools (1 = lag far behind most other countries' schools, 7 = are among the best in the world)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

5.05 Quality of management schools

Management or business schools in your country are (1 = limited or of poor quality, 7 = among the best in the world)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

5.06 Internet access in schools

Internet access in schools is (1 = very limited; 7 = extensive — most children have frequent access)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

5.07 Local availability of specialized research and training services

In your country, specialized research and training services are (1 = not available, 7 = available from world-class local institutions)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

5.08 Extent of staff training

The general approach of companies in your country to human resources is (1 = to invest little in training and employee development, 7 = to invest heavily to attract, train, and retain employees)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.01 Intensity of local competition

Competition in the local market is (1 = limited in most industries and price-cutting is rare, 7 = intense in most industries as market leadership changes over time)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.02 Extent of market dominance

Corporate activity in your country is (1 = dominated by a few business groups, 7 = spread among many firms)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.03 Effectiveness of anti-monopoly policy

Anti-monopoly policy in your country is (1 = lax and not effective at promoting competition, 7 = effective and promotes competition)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.04 Extent and effect of taxation

The level of taxes in your country (1 = significantly limits the incentives to work or invest, 7 = has little impact on the incentives to work or invest

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.05 Total tax rate (hard data)

This variable is a combination of profit tax (% of profits), labor tax and contribution (% of profits), and other taxes (% of profits) | 2006

Source: The World Bank, *Doing Business 2007*: How to Reform.

6.06 Number of procedures required to start a business (hard data)

Number of procedures required to start a business | 2006

Source: The World Bank, *Doing Business 2007*: How to Reform.

6.07 Time required to start a business (hard data)

Number of days required to start a business | 2006

Source: The World Bank, *Doing Business 2007*: How to Reform.

6.08 Agricultural policy costs

Agricultural policy in your country (1 = is excessively burdensome for the economy, 7 = balances the interests of taxpayers, consumers, and producers)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.09 Prevalence of trade barriers

In your country, tariff and non-tariff barriers significantly reduce the ability of imported goods to compete in the domestic market (1 = strongly agree, 7 = strongly disagree)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.10 Trade-weighted tariff rate (hard data)

The average rate of duty per imported value unit | 2005

This measure uses weights for each tariff based on the share of imports for each good. This can be calculated by dividing the country's total tariff revenue by the total value of imports.

Source: WTO, ITC and United Nations, *World Tariff Profiles 2006*; Heritage Foundation, *Index of Economic Freedom 2007*.

6.11 Prevalence of foreign ownership

Foreign ownership of companies in your country is (1 = rare, limited to minority stakes, and often prohibited in key sectors, 7 = prevalent and encouraged)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.12 Business impact of rules on FDI

In your country, rules governing foreign direct investment are (1 = damaging and discourage foreign direct investment, 7 = beneficial and encourage foreign direct investment)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.13 Burden of customs procedures

Customs procedures, such as formalities regulating the entry and exit of merchandise in your country are (1 = extremely slow and cumbersome, 7 = rapid and efficient)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.14 Degree of customer orientation

Firms in your country (1 = generally treat their customers badly, 7 = are highly responsive to customers and customer retention)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

6.15 Buyer sophistication

Buyers in your country make purchasing decisions (1 = based solely on the lowest price, 7 = based on a sophisticated analysis of performance attributes)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.01 Cooperation in labor-employer relations

Labor-employer relations in your country are (1 = generally confrontational, 7 = generally cooperative)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.02 Flexibility of wage determination

Wages in your country are (1 = set by a centralized bargaining process, 7 = up to each individual company)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.03 Non-wage labor costs (hard data)

This variable estimates social security payments and payroll taxes associated with hiring an employee in fiscal year 2005, expressed as a percentage of the worker's salary | 2005

Social security payments include retirement fund, sickness, maternity and health insurance, workplace injury, family allowance, and other obligatory contributions.

Source: The World Bank, *Doing Business 2007: How to Reform*

7.04 Rigidity of employment (hard data)

Rigidity of Employment Index on a 0–100 (worst) scale | 2006

This index is the average of three subindices: Difficulty of hiring, rigidity of hours, and difficulty of firing. The three subindices have several components and all take values between 0 and 100, with higher values indicating more rigid regulation.

Source: The World Bank, *Doing Business 2007: How to Reform*

7.05 Hiring and firing practices

The hiring and firing of workers is (1 = impeded by regulations, 7 = flexibly determined by employers)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.06 Firing costs (hard data)

Firing costs (in weeks of wage) | 2006

This variable estimates the cost of advance notice requirements, severance payments and penalties due when terminating a redundant worker, expressed in weekly wages.

Source: The World Bank, *Doing Business 2007: How to Reform*

7.07 Pay and productivity

Pay in your country is (1 = not related to worker productivity, 7 = strongly related to worker productivity)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.08 Reliance on professional management

Senior management positions in your country are (1 = usually held by relatives, 7 = held by professional managers chosen for their superior qualification)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.09 Brain drain

Your country's talented people (1 = normally leave to pursue opportunities in other countries, 7 = almost always remain in the country)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

7.10 Female participation in labor force (hard data)

Female participation in the labor force as a percentage of male participation | 2005

This measure is the percentage of women aged 14–65 participating in the labor force divided by the percentage of men aged 14–65 participating in the labor force.

Source: International Labour Organization, *Key Indicators of the Labour Market (KILM) 4th Edition* (2005)

8.01 Financial market sophistication

The level of sophistication of financial markets in your country is (1 = lower than international norms, 7 = higher than international norms)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.02 Financing through local equity market

Raising money by issuing shares on the local stock market is (1 = nearly impossible, 7 = quite possible for a good company)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.03 Ease of access to loans

How easy is it to obtain a bank loan in your country with only a good business plan and no collateral? (1 = impossible, 7 = easy)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.04 Venture capital availability

Entrepreneurs with innovative but risky projects can generally find venture capital in your country (1 = not true, 7 = true)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.05 Restriction on capital flows

The flow of capital into and out of your country is (1 = restricted, 7 = not restricted)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.06 Strength of investor protection (hard data)

Strength of Investor Protection Index on a 0–10 (best) scale | 2006

This variable is a combination of Extent of disclosure index (transparency of transactions), Extent of director liability index (liability for self-dealing) and Ease of shareholder suit index (shareholders' ability to sue officers and directors for misconduct).

Source: The World Bank, *Doing Business 2007: How to Reform*.

8.07 Soundness of banks

Banks in your country are (1 = insolvent and may require a government bailout, 7 = generally healthy with sound balance sheets)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.08 Regulation of securities exchanges

Regulation of securities exchanges in your country is (1 = ineffective, subject to undue influence from industry and government, and not transparent, 7 = effective, independent from undue influence from industry and government, and transparent)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

8.09 Legal rights index (hard data)

Strength of legal rights index on a 0-10 (best) scale | 2006

This index measures the degree to which collateral and bankruptcy laws protect borrowers and lenders' rights and thus facilitate lending.

Source: The World Bank, Doing Business 2007: How to Reform.

9.01 Availability of latest technologies

In your country, the latest technologies are (1 = not widely available and used, 7 = widely available and used)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

9.02 Firm-level technology absorption

Companies in your country are (1 = not able to absorb new technology, 7 = aggressive in absorbing new technology)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

9.03 Laws relating to ICT

Laws relating to the use of information technology, such as electronic commerce, digital signatures and consumer protection are (1 = nonexistent, 7 = well developed and enforced)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

9.04 FDI and technology transfer

Foreign direct investment in your country (1 = brings little new technology, 7 = is an important source of new technology)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

9.05 Mobile telephone subscribers (hard data)

Mobile telephone subscribers per 100 population | 2005

The term subscribers refers to users of mobile telephones subscribing to an automatic public mobile telephone service that provides access to the public switched telephone network using cellular technology. This can include analogue and digital cellular systems but should not include non-cellular systems. Subscribers to fixed wireless, public mobile data services, or radio paging services are not included.

Source: International Telecommunication Union, *World Telecommunication Indicators 2006*; national sources.

9.06 Internet users (hard data)

Internet users per 100 population | 2005

Internet users are people with access to the worldwide network.

Source: International Telecommunication Union, *World Telecommunication Indicators 2006*; national sources.

9.07 Personal computers (hard data)

Personal computers per 100 population | 2005

According to the World Bank, personal computers are self-contained computers designed to be used by a single individual.

Source: International Telecommunication Union, *World Telecommunication Indicators 2006*; national sources.

9.08 Broadband Internet subscribers (hard data)

Broadband Internet subscribers per 100 population | 2005

The International Telecommunication Union considers broadband to be any dedicated connection to the Internet of 256 kilobits per second or faster, in both directions. Broadband subscribers refers to the sum of DSL, cable modem, and other broadband (for example, fiber optic, fixed wireless, apartment LANs, satellite connections) subscribers.

Source: International Telecommunication Union, *World Telecommunication Indicators 2006*; national sources.

9.09 Prevalence of foreign technology licensing

In your country, licensing of foreign technology is (1 = uncommon, 7 = a common means of acquiring new technology)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

10.01 Domestic market size index (hard data)

Sum of gross domestic product plus value of imports of goods and services, minus value of exports of goods and services, normalized on a 1 to 7 scale | 2006

The size of the domestic market is calculated as the natural log of the sum of the gross domestic product valued at PPP plus the total value (PPP estimates) of imports of goods and services, minus the total value (PPP estimates) of exports of goods and services. Data are then normalized on a 1 to 7 scale. PPP estimates of imports and exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP.

Source: Authors' calculations; IMF, *World Economic Outlook Database* (April 2007); Economist Intelligence Unit, *CountryData Database* (May 2007); The World Bank, *World Development Indicators 2007*; national sources.

10.02 Foreign market size index (hard data)

Value of exports of goods and services, normalized on a 1 to 7 scale | 2006

The size of the foreign market is estimated as the natural log of the total value (PPP estimates) of exports of goods and services, normalized on a 1 to 7 scale. PPP estimates of exports is obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP.

Source: Authors' calculations; IMF, *World Economic Outlook Database* (April 2007); Economist Intelligence Unit, *CountryData Database* (May 2007); The World Bank, *World Development Indicators 2007*; national sources.

10.03 GDP valued at PPP (hard data)

Gross domestic product valued at purchasing power parity in millions of international dollars | 2006

Source: IMF, *World Economic Outlook Database (April 2007)*; national sources.

10.04 Imports as a percentage of GDP (hard data)

Imports of goods and services as a percentage of GDP | 2006

Source: Economist Intelligence Unit, *CountryData Database* (May 2007); The World Bank, *World Development Indicators 2007*; national sources.

10.05 Exports as a percentage of GDP (hard data)

Exports of goods and services as a percentage of GDP | 2006

Source: Economist Intelligence Unit, *CountryData Database* (May 2007); The World Bank, *World Development Indicators 2007*; national sources.

11.01 Local supplier quantity

Local suppliers in your country are (1 = largely nonexistent, 7 = numerous and include the most important materials, components, equipment, and services)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.02 Local supplier quality

The quality of local suppliers in your country is (1 = poor, as they are inefficient and have little technological capability, 7 = very good, as they are internationally competitive and assist in new product and process development)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.03 State of cluster development

Strong and deep clusters are widespread throughout the economy (1 = strongly disagree, 7 = strongly agree)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.04 Nature of competitive advantage

Competitiveness of your country's companies in international markets is primarily due to (1 = low-cost or local natural resources, 7 = unique products and processes)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.05 Value chain breadth

Exporting companies in your country (1 = are primarily involved in resource extraction or production, 7 = not only produce but also perform product design, marketing sales, logistics, and after-sales services)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.06 Control of international distribution

International distribution and marketing from your country (1 = take place through foreign companies, 7 = are owned and controlled by local companies)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.07 Production process sophistication

Production processes use (1 = labor-intensive methods or previous generations of process technology, 7 = the world's best and most efficient process technology)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.08 Extent of marketing

The extent of marketing in your country is (1 = limited and primitive, 7 = extensive and employs the world's most sophisticated tools and techniques)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

11.09 Willingness to delegate authority

Willingness to delegate authority to subordinates is (1 = low – top management controls all important decisions, 7 = high – authority is mostly delegated to business unit heads and other lower-level managers)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.01 Capacity for innovation

Companies obtain technology (1 = exclusively from licensing or imitating foreign companies, 7 = by conducting formal research and pioneering their own new products and processes)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.02 Quality of scientific research institutions

Scientific research institutions in your country, such as university laboratories and government laboratories are (1 = nonexistent, 7 = the best in their fields internationally)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.03 Company spending on R&D

Companies in your country (1 = do not spend money on research and development, 7 = spend heavily on research and development relative to international peers)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.04 University-industry research collaboration

In its R&D activity, business collaboration with local universities is (1 = minimal or nonexistent, 7 = intensive and ongoing)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.05 Government procurement of advanced technology products

Government purchase decisions for the procurement of advanced technology products are (1 = based solely on price, 7 = based on technical performance and innovativeness)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.06 Availability of scientists and engineers

Scientists and engineers in your country are (1 = nonexistent or rare, 7 = widely available)

Source: World Economic Forum, Executive Opinion Survey 2006, 2007.

12.07 Utility patents (hard data)

Number of utility patents (i.e., patents for invention) granted between January 1 and December 31, 2006, per million population | 2006

Utility patents are recorded such that the origin of the patent is determined by the first-named inventor at the time of the grant. Patents per million population are calculated by dividing the number of patents granted to a country in 2006 by that country's population in the same year.

Source: The United States Patent and Trademark Office (March 2007).

CHAPTER 2

Ukraine's Competitiveness in International and Historical Context

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Since its independence almost a decade and a half ago, when it was one of the economically most potent republics of the former Soviet Union, Ukraine has experienced a particularly long and painful transition. In 1994, at its lowest point, GDP contracted by a shocking 22.9% and it took until 2004 for the country to reach the pre-transition level of per capita GDP in PPP (purchasing power parity) terms. After years of stalemate, macroeconomic reforms were introduced towards the end of the 1990s, and since the beginning of the decade Ukraine has followed a more positive growth path, with real GDP growth in 2000–2007 averaging more than 7%. More recently, the process of joining the WTO and the possibility – albeit distant – of accession to the European Union have provided additional impetus for reform and investment.

The present international benchmarking study of Ukraine's competitiveness aims at contrasting the country's position with selected countries that could serve as examples. Such an exercise will provide Ukraine's policymakers and business leaders with an objective account of its international standing, highlighting the strengths of the country as well as challenges to be addressed on a priority basis.

A number of countries have been selected as comparators for the purpose of this study. These include countries from different geographic regions, as well as Ukraine's neighbors. The selection of countries was based on similarities with Ukraine in terms of recent economic history, size and structure of the economy. In addition, some countries were selected because their experiences can serve as examples for Ukraine.

2.1 Results of the Global Competitiveness Index 2007-2008

Before diving into a detailed assessment of Ukraine's competitiveness, it is useful to take a look at the overall Global Competitiveness Index (GCI) 2007–2008 ranking on which this benchmarking study is based, and in particular to analyse how countries from the two regions with which Ukraine is compared perform in this ranking. Table 2.1 presents the results of the GCI 2007–2008, as well as the previous edition. Between these two editions of the index, we have increased the coverage from 125 to 131 economies. As many of the new inclusions in 2007 came in at fairly high rankings, the table also reports the ranking for 2007–2008 within a constant sample of 125 countries. This enables the authors to correct for changes in rankings due to additions of new economies.

Maintaining its leading position over the past year, the United States is the most competitive economy, followed by Switzerland and Denmark. Other Nordic countries, such as Sweden and Finland, also come in among the top 10. Overall, the top 20 are dominated by the more developed OECD countries and some of the Asian "Tigers" – Korea, Hong Kong and Taiwan, China.

Table 2.1 Global Competitiveness Index 2007-2008 rankings and 2006-2007 comparisons

		GCI 2007-2008			GCI 2006-2007
Quartile	Country/Economy	Rank	Score	Rank among 2006 countries	Rank
1st quartile	United States	1	5.67	1	1
	Switzerland	2	5.62	2	4
	Denmark	3	5.55	3	3
	Sweden	4	5.54	4	9
	Germany	5	5.51	5	7
	Finland	6	5.49	6	6
	Singapore	7	5.45	7	8
	Japan	8	5.43	8	5
	United Kingdom	9	5.41	9	2
	Netherlands	10	5.40	10	11
	Korea	11	5.40	11	23
	Hong Kong SAR	12	5.37	12	10
	Canada	13	5.34	13	12
	Taiwan, China	14	5.25	14	13
	Austria	15	5.23	15	18
	Norway	16	5.20	16	17
	Israel	17	5.20	17	14
	France	18	5.18	18	15
	Australia	19	5.17	19	16
	Belgium	20	5.10	20	24
	Malaysia	21	5.10	21	19
	Ireland	22	5.03	22	22
	Iceland	23	5.02	23	20
	New Zealand	24	4.98	24	21
	Luxembourg	25	4.88	25	25
	Chile	26	4.77	26	27
	Estonia	27	4.74	27	26
	Thailand	28	4.70	28	28
	Spain	29	4.66	29	29
	Kuwait	30	4.66	30	30
	Qatar	31	4.63	31	32
	Tunisia	32	4.58	32	33
	Czech Republic	33	4.58	33	31
2nd quartile	China	34	4.57	34	34
	Saudi Arabia	35	4.55		
	Puerto Rico	36	4.50		
	United Arab Emirates	37	4.50	35	37
	Lithuania	38	4.49	36	39
	Slovenia	39	4.48	37	40
	Portugal	40	4.48	38	43
	Slovak Republic	41	4.45	39	36
	Oman	42	4.43		
	Bahrain	43	4.42	40	48
	South Africa	44	4.42	41	35
	Latvia	45	4.41	42	44
	Italy	46	4.36	43	47
	Hungary	47	4.35	44	38
	India	48	4.33	45	42
	Jordan	49	4.32	46	46
	Barbados	50	4.32	47	41
	Poland	51	4.28	48	45
	Mexico	52	4.26	49	52
	Turkey	53	4.25	50	58
	Indonesia	54	4.24	51	54
	Cyprus	55	4.23	52	49
	Malta	56	4.21	53	51
	Croatia	57	4.20	54	56
	Russian Federation	58	4.19	55	59
	Panama	59	4.18	56	60
	Mauritius	60	4.16	57	55
	Kazakhstan	61	4.14	58	50
	Uzbekistan	62	4.13		
	Costa Rica	63	4.11	59	68
	Morocco	64	4.08	60	65
	Greece	65	4.08	61	61
3rd quartile	Azerbaijan	66	4.07	62	62
	El Salvador	67	4.05	63	53
	Vietnam	68	4.04	64	64
	Colombia	69	4.04	65	63
	Sri Lanka	70	3.99	66	81
	Philippines	71	3.99	67	75
	Brazil	72	3.99	68	66
	Ukraine	**73**	**3.98**	**69**	**69**
	Romania	74	3.97	70	73
	Uruguay	75	3.97	71	79
	Botswana	76	3.96	72	57
	Egypt	77	3.96	73	71
	Jamaica	78	3.95	74	67
	Bulgaria	79	3.93	75	74
	Syria	80	3.91		
	Algeria	81	3.91	76	77
	Montenegro	82	3.91		
	Honduras	83	3.89	77	90
	Trinidad and Tobago	84	3.88	78	76
	Argentina	85	3.87	79	70
	Peru	86	3.87	80	78
	Guatemala	87	3.86	81	91
	Libya	88	3.85		
	Namibia	89	3.85	82	72
	Georgia	90	3.83	83	87
	Serbia	91	3.78		
	Pakistan	92	3.77	84	83
	Armenia	93	3.76	85	80
	Macedonia, FYR	94	3.73	86	84
	Nigeria	95	3.69	87	95
	Dominican Republic	96	3.65	88	93
	Moldova	97	3.64	89	86
	Venezuela	98	3.63	90	85
4th quartile	Kenya	99	3.61	91	88
	Senegal	100	3.61		
	Mongolia	101	3.60	92	89
	Gambia, The	102	3.59	93	102
	Ecuador	103	3.57	94	94
	Tanzania	104	3.56	95	97
	Bolivia	105	3.55	96	99
	Bosnia/Herzegovina	106	3.55	97	82
	Bangladesh	107	3.55	98	92
	Benin	108	3.49	99	106
	Albania	109	3.48	100	98
	Cambodia	110	3.48	101	105
	Nicaragua	111	3.45	102	100
	Burkina Faso	112	3.43	103	114
	Suriname	113	3.40	104	103
	Nepal	114	3.38	105	104
	Mali	115	3.37	106	115
	Cameroon	116	3.37	107	109
	Tajikistan	117	3.37	108	96
	Madagascar	118	3.36	109	111
	Kyrgyz Republic	119	3.34	110	110
	Uganda	120	3.33	111	108
	Paraguay	121	3.30	112	107
	Zambia	122	3.29	113	118
	Ethiopia	123	3.28	114	116
	Lesotho	124	3.27	115	101
	Mauritania	125	3.26	116	117
	Guyana	126	3.25	117	113
	Timor-Leste	127	3.20	118	120
	Mozambique	128	3.02	119	119
	Zimbabwe	129	2.88	120	112
	Burundi	130	2.84	121	122
	Chad	131	2.78	122	121

Table 2.2 Global Competitiveness Index 2007-2008 ranking by stage of development

Factor-driven economies (Stage 1)				Efficiency-driven economies (Transition from 1 to 2 and stage 2)				Innovation-driven economies (Transition from 2 to 3 and stage 3)			
Rank within group	Country/Economy	Overall Rank	Score	Rank within group	Country/Economy	Overall Rank	Score	Rank within group	Country/Economy	Overall Rank	Score
1	India	48	4.33	1	Malaysia	21	5.10	1	United States	1	5.67
2	Indonesia	54	4.24	2	Chile	26	4.77	2	Switzerland	2	5.62
3	Uzbekistan	62	4.13	3	Thailand	28	4.70	3	Denmark	3	5.55
4	Morocco	64	4.08	4	Kuwait	30	4.66	4	Sweden	4	5.54
5	Vietnam	68	4.04	5	Tunisia	32	4.59	5	Germany	5	5.51
6	Sri Lanka	70	3.99	6	China	34	4.57	6	Finland	6	5.49
7	Philippines	71	3.99	7	Saudi Arabia	35	4.55	7	Singapore	7	5.45
8	Egypt	77	3.96	8	Lithuania	38	4.49	8	Japan	8	5.43
9	Syria	80	3.91	9	Oman	42	4.43	9	United Kingdom	9	5.41
10	Honduras	83	3.89	10	South Africa	44	4.42	10	Netherlands	10	5.40
11	Georgia	90	3.83	11	Latvia	45	4.41	11	Korea	11	5.40
12	Pakistan	92	3.77	12	Jordan	49	4.32	12	Hong Kong SAR	12	5.37
13	Armenia	93	3.76	13	Poland	51	4.28	13	Canada	13	5.34
14	Nigeria	95	3.69	14	Mexico	52	4.26	14	Taiwan, China	14	5.25
15	Moldova	97	3.64	15	Turkey	53	4.25	15	Austria	15	5.23
16	Kenya	99	3.61	16	Russian Federation	58	4.19	16	Norway	16	5.20
17	Senegal	100	3.61	17	Panama	59	4.18	17	Israel	17	5.20
18	Mongolia	101	3.60	18	Mauritius	60	4.16	18	France	18	5.18
19	Gambia, The	102	3.59	19	Kazakhstan	61	4.14	19	Australia	19	5.17
20	Tanzania	104	3.56	20	Costa Rica	63	4.11	20	Belgium	20	5.10
21	Bolivia	105	3.55	21	Azerbaijan	66	4.07	21	Ireland	22	5.03
22	Bangladesh	107	3.55	22	El Salvador	67	4.05	22	Iceland	23	5.02
23	Benin	108	3.49	23	Colombia	69	4.04	23	New Zealand	24	4.98
24	Cambodia	110	3.48	24	Brazil	72	3.99	24	Luxembourg	25	4.88
25	Nicaragua	111	3.45	25	Ukraine	73	3.98	25	Estonia	27	4.74
26	Burkina Faso	112	3.43	26	Romania	74	3.97	26	Spain	29	4.66
27	Nepal	114	3.38	27	Uruguay	75	3.97	27	Qatar	31	4.63
28	Mali	115	3.37	28	Botswana	76	3.96	28	Czech Republic	33	4.58
29	Cameroon	116	3.37	29	Jamaica	78	3.95	29	Puerto Rico	36	4.50
30	Tajikistan	117	3.37	30	Bulgaria	79	3.93	30	United Arab Emirates	37	4.50
31	Madagascar	118	3.36	31	Algeria	81	3.91	31	Slovenia	39	4.48
32	Kyrgyz Republic	119	3.34	32	Montenegro	82	3.91	32	Portugal	40	4.48
33	Uganda	120	3.33	33	Argentina	85	3.87	33	Slovak Republic	41	4.45
34	Paraguay	121	3.30	34	Peru	86	3.87	34	Bahrain	43	4.42
35	Zambia	122	3.29	35	Guatemala	87	3.86	35	Italy	46	4.36
36	Ethiopia	123	3.28	36	Libya	88	3.85	36	Hungary	47	4.35
37	Lesotho	124	3.27	37	Namibia	89	3.85	37	Barbados	50	4.32
38	Mauritania	125	3.26	38	Serbia	91	3.78	38	Cyprus	55	4.23
39	Guyana	126	3.25	39	Macedonia, FYR	94	3.73	39	Malta	56	4.21
40	Timor-Leste	127	3.20	40	Dominican Republic	96	3.65	40	Croatia	57	4.20
41	Mozambique	128	3.02	41	Venezuela	98	3.63	41	Greece	65	4.08
42	Zimbabwe	129	2.88	42	Ecuador	103	3.57	42	Trinidad and Tobago	84	3.88
43	Burundi	130	2.84	43	Bosnia and Herzegovina	106	3.55				
44	Chad	131	2.78	44	Albania	109	3.48				
				45	Suriname	113	3.40				

As can be seen in Table 2.1, most of the geographic regions, with the notable exception of the Arab world and some parts of Asia, cluster around each other in the competitiveness rankings. In Europe, many western European countries dominate the top of the rankings with a very high median rank of 18 for the EU 15, while central and eastern European EU members are to be found mostly in the second quartile with some outliers in the third. The median rank for this group of countries is 46. Among the new EU member countries (EU Accession 12), Estonia is the best performer at rank 27, followed by the Czech Republic at 33. The weakest performer within this group is Bulgaria at rank 79.

Table 2.3 GCI top 10 countries' performance at pillar level*

Overall rank	Country	Count (out of 12 pillars) In Top 10	Count (out of 12 pillars) Ranked first
1	United States	7	3
2	Switzerland	8	0
3	Denmark	11	0
4	Sweden	8	1
5	Germany	5	2
6	Finland	7	3
7	Singapore	5	0
8	Japan	5	0
9	United Kingdom	3	0
10	Netherlands	6	0

* For example, the United States appears 7 times in a pillar's top 10 and ranks first in 3 pillars.

Table 2.4 GCI 2007-2008 results by pillar, top 10 and selected countries

	1st pillar: Institutions		2nd pillar: Infrastructure		3rd pillar: Macroeconomic stability		4th pillar: Health and primary education		5th pillar: Higher education and training		6th pillar: Goods market efficiency
1	Finland	1	Germany	1	Kuwait	1	Finland	1	Finland	1	Hong Kong SAR
2	Denmark	2	France	2	Algeria	2	Iceland	2	Sweden	2	Singapore
3	Singapore	3	Singapore	3	Saudi Arabia	3	Denmark	3	Denmark	3	Denmark
4	Switzerland	4	Switzerland	4	Libya	4	New Zealand	4	Taiwan, China	4	Ireland
5	Iceland	5	Hong Kong SAR	5	Hong Kong SAR	5	Sweden	5	United States	5	Austria
6	Sweden	6	United States	6	Norway	6	Taiwan, China	6	Korea	6	Switzerland
7	Germany	7	Denmark	7	China	7	Norway	7	Switzerland	7	Sweden
8	Norway	8	Canada	8	Korea	8	Canada	8	Iceland	8	Netherlands
9	New Zealand	9	Japan	9	Finland	9	Barbados	9	Norway	9	New Zealand
10	Netherlands	10	Finland	10	Denmark	10	Netherlands	10	Netherlands	10	Finland
Comparators											
29	Chile	6	United States	7	China	30	Estonia	5	United States	12	United States
33	United States	31	Chile	12	Chile	34	United States	23	Estonia	27	Estonia
34	Estonia	36	Estonia	14	Estonia	36	Poland	25	Lithuania	28	Chile
48	India	48	Lithuania	23	Azerbaijan	43	Lithuania	35	Poland	36	India
55	Turkey	52	China	25	Kazakhstan	52	Romania	42	Chile	43	Turkey
58	Lithuania	59	Turkey	35	Mexico	54	Argentina	45	Russian Federation	44	Lithuania
77	China	60	Azerbaijan	37	Russian Federation	55	Mexico	51	Argentina	58	China
79	Colombia	61	Mexico	38	Lithuania	60	Russian Federation	**53**	**Ukraine**	61	Mexico
80	Kazakhstan	65	Russian Federation	56	Poland	81	China	54	Romania	63	Kazakhstan
82	Poland	67	India	63	Colombia	64	Colombia	55	India	69	Poland
83	Azerbaijan	71	Kazakhstan	64	Argentina	70	Chile	57	Kazakhstan	74	Romania
85	Mexico	**77**	**Ukraine**	75	United States	**74**	**Ukraine**	60	Turkey	84	Russian Federation
94	Romania	78	Brazil	**82**	**Ukraine**	77	Turkey	64	Brazil	85	Colombia
104	Brazil	80	Poland	83	Turkey	84	Brazil	69	Colombia	95	Azerbaijan
115	**Ukraine**	81	Argentina	84	Romania	94	Kazakhstan	72	Mexico	97	Brazil
116	Russian Federation	86	Colombia	108	India	101	India	78	China	**101**	**Ukraine**
123	Argentina	100	Romania	126	Brazil	103	Azerbaijan	89	Azerbaijan	115	Argentina

	7th pillar: Labor market efficiency		8th pillar: Financial market sophistication		9th pillar: Technological readiness		10th pillar: Market size		11th pillar: Business sophistication		12th pillar: Innovation
1	United States	1	Hong Kong SAR	1	Sweden	1	United States	1	Germany	1	United States
2	Singapore	2	United Kingdom	2	Iceland	2	China	2	Switzerland	2	Switzerland
3	Switzerland	3	Singapore	3	Switzerland	3	India	3	Japan	3	Finland
4	Hong Kong SAR	4	New Zealand	4	Netherlands	4	Japan	4	Sweden	4	Japan
5	Denmark	5	Ireland	5	Denmark	5	Germany	5	Austria	5	Israel
6	Iceland	6	Denmark	6	Hong Kong SAR	6	United Kingdom	6	Denmark	6	Sweden
7	United Kingdom	7	Australia	7	Korea	7	France	7	United States	7	Germany
8	Canada	8	Luxembourg	8	Norway	8	Italy	8	Netherlands	8	Korea
9	New Zealand	9	Sweden	9	United States	9	Russia	9	Korea	9	Taiwan, China
10	Japan	10	Israel	10	Luxembourg	10	Brazil	10	France	10	Denmark
Comparators											
1	United States	11	United States	9	United States	1	United States	7	United States	1	United States
14	Chile	26	Chile	19	Estonia	2	China	26	India	28	India
15	Kazakhstan	31	Estonia	38	Lithuania	3	India	32	Chile	31	Estonia
26	Estonia	37	India	42	Chile	9	Russian Federation	39	Brazil	38	China
33	Russian Federation	54	Lithuania	51	Poland	10	Brazil	41	Turkey	44	Brazil
44	Lithuania	61	Turkey	53	Turkey	13	Mexico	42	Lithuania	45	Chile
46	Azerbaijan	64	Poland	55	Brazil	18	Turkey	44	Estonia	48	Lithuania
49	Poland	67	Mexico	59	Romania	22	Poland	54	Mexico	53	Turkey
55	China	72	Colombia	60	Mexico	23	Argentina	57	China	54	Azerbaijan
65	**Ukraine**	73	Brazil	62	India	**26**	**Ukraine**	65	Colombia	57	Russian Federation
74	Colombia	78	Romania	72	Russian Federation	30	Colombia	68	Poland	58	Poland
85	Romania	80	Kazakhstan	73	China	43	Romania	73	Romania	**65**	**Ukraine**
92	Mexico	**85**	**Ukraine**	76	Colombia	47	Chile	75	Argentina	71	Mexico
96	India	91	Azerbaijan	77	Kazakhstan	56	Kazakhstan	80	Azerbaijan	72	Colombia
104	Brazil	109	Russian Federation	78	Argentina	87	Lithuania	**81**	**Ukraine**	75	Kazakhstan
126	Turkey	114	Argentina	83	Azerbaijan	71	Azerbaijan	85	Kazakhstan	76	Romania
129	Argentina	118	China	**93**	**Ukraine**	91	Estonia	88	Russian Federation	91	Argentina

As is to be expected, CIS member countries[1] are in general less competitive than those from central and eastern Europe. With a median rank of 82, they rank in general lower than the central European EU members, and are mainly to be found in the lower half of the second and in the third quartile with some outliers in the fourth. Russia leads the rankings for this group at 58th place, followed by Kazakhstan, and the Kyrgyz Republic, which is the weakest performer at 119th position. This large spread confirms the diversity of economic development in the former Soviet Union economies, all of which gained independence and embarked upon economic transition in the early 1990s.

Ukraine's position at 73rd rank, one place behind Brazil, and one ahead of Romania, compares fairly well against other CIS countries, but trails behind the performance of most of the new EU members. On a positive note, Ukraine is more competitive than the most recent EU members Romania and Bulgaria, which bodes well for Ukraine's potential EU membership.

A comparison of Ukraine to countries that fall into the same stage of development provides additional interesting results. Table 2.2 shows the countries divided in three groups according to the stages of development introduced in Chapter 1. In terms of its overall competitiveness Ukraine ranks approximately in the middle of its peer group of efficiency-driven economies. Chile and Malaysia are the best performers in this group of countries, which could serve as examples for Ukraine in a number of areas, particularly given that both countries have significantly improved their economic performance over the past years.

In general, it must be noted that countries that excel in the Global Competitiveness Index tend to perform very well across many of the pillars, as shown in Table 2.3. Among the top 10, most countries rank in the top 10 in at least half of the pillars. The best performer, the United States, ranks first on three pillars. This underscores the notion that the pillars are interdependent. Of particular importance is the performance on the institutions pillar. Efficient public and private institutions are the backbone of an economy; they influence the policymaking process and the efficiency of regulations in all other areas, as well as the quality of enforcement of laws and regulations. For reference, Table 2.4 shows the composition of the top 10 in each pillar, as well as the ranks of Ukraine and of the comparator countries.

2.2 Ukraine's performance in the Global Competitiveness Index

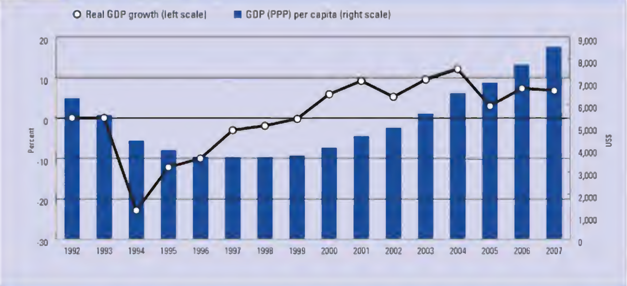
Recent economic developments

Ukraine's transition to a market economy has been particularly difficult. Between 1990 and 1999, its output contracted by 60%, much more severely than in all central and eastern European countries, and in Russia, where GDP bottomed in 1998 at 40% below the 1990 levels.

Prior to independence, the Ukrainian Republic was the most important economic engine of the former Soviet Union after Russia, producing about four times the output of the next-ranking republic. Its fertile black soil generated more than 25% of Soviet agricultural output and its heavy industry supplied the equipment, machinery and raw materials to industrial and mining sites in other regions of the former USSR.

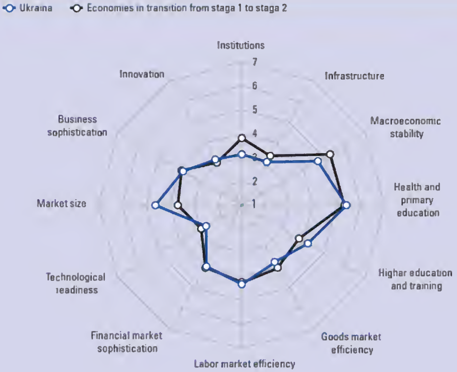
Shortly after independence was supported in a countrywide referendum in 1991, the Ukrainian government liberalized most prices and erected a legal framework for privatization, but widespread resistance to reform within the government, the legislature and a significant part of the population soon stalled reform efforts and led to some backtracking in structural reforms. As a consequence, a large number of state-owned enterprises were exempt from the privatization process and not restructured. To keep those industries and the agricultural sector afloat, the state subsidized them heavily in the following years.

Figure 2.1 Evolution of Ukraine's GDP 1992-2007



Source: EBRD Transition Report Update 2007

Figure 2.2 Ukraine's performance against peer countries



Macroeconomic stabilization has proven equally difficult. Loose monetary policies pushed inflation to hyperinflationary levels in late 1993, when Ukraine held the world record for inflation in one calendar year. Prices stabilized only after the introduction of the new currency, the hryvnia (UAH), in 1996.

As a result of these poor policies, which exacerbated the negative effects of transition, poverty was on the rise and human development indicators deteriorated. However, since 1999 per capita GDP has recovered steadily reaching 1990 level by 2004 (See Figure 2.1).

Since 2005, successive Ukrainian governments have significantly improved the business environment by eliminating most tax and customs privileges, which is bringing more economic activity out of Ukraine's large shadow economy. Also, in its efforts to accede to the World Trade Organization, Ukraine passed more than 20 laws in 2006, taking a step towards bringing its economic regime in line with international standards. Yet so far, the governments have shunned away from tackling the most politically sensitive reforms. In particular, little progress has been made with respect to fighting corruption, developing capital markets and improving the legislative framework for businesses.

Ukraine's rapidly growing economy is a dynamic emerging market with a relatively large consumer base, 28th in the world in terms of GDP (PPP). The economy appears to be back on track after the steel-price related dip in 2005 and reached growth rates in the order of 7% in 2006 and 2007. The dynamism is also reflected in the stock market, which grew by a factor of 10 between 2000 and 2006. In the meantime, living conditions started catching up with western neighbors, with salaries increasing at a rate of 30% per annum for several years in a row, albeit from a low base.

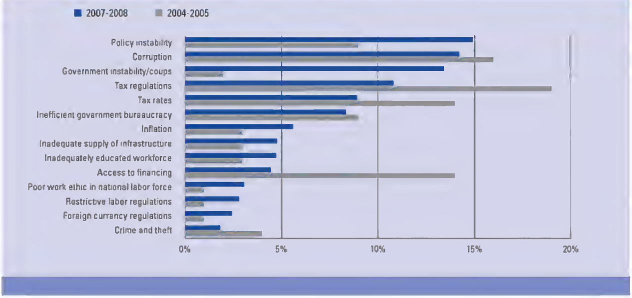
Today, the economy continues to rely heavily on agriculture, which contributes 17.5% of GDP (in 2006), while the share of the services sector is fairly low at 39.8%. Ukraine's dependence on Russia for energy supplies, the fairly undiversified export structure that relies heavily on natural resources, and the lack of significant structural reform make its economy very vulnerable to external shocks.[7]

Ukraine in the GCR

As noted, Ukraine comes in at a fairly mediocre 73rd rank in the Global Competitiveness Index. Placing one position behind Brazil, it outperforms the most recent additions to the EU, Romania and Bulgaria. Compared to other CIS countries, it places exactly at the level of their median rank. With an overall score of 3.98, Ukraine remains far behind the EU member countries that achieve an average score of 5.06, and also behind the more advanced central and eastern European nations that recently joined the EU (EU Accession 12), with an average score of 4.34.

Over the past year, no major changes in the country's competitiveness ranking were observed. Although it appears that Ukraine's position dropped by four ranks,

Figure 2.3 Most problematic factors for doing business in Ukraine 2007-2008 and 2004-2005



this change reflects the addition of four new countries that entered the sample ahead of Ukraine.

A more thorough analysis of Ukraine's performance reveals a few strengths and a number of weaknesses. Among the three subindexes that form the GCI, Ukraine achieves the lowest ranking, 90th, on basic requirements and comes in significantly higher on the two remaining ones, 66th for efficiency enhancers and 75th for innovation and sophistication factors. According to the GCI methodology, as a country transitioning from the factor- to the efficiency-driven stage of development, Ukraine should focus first on upgrading basic requirements and second on efficiency enhancers to prepare for the near future. Innovation and sophistication factors, which obtain a very low weight in the overall GCI score, play a less important role at this stage.

The importance of focussing on the pillars entering the basic requirements subindex for improving Ukraine's competitiveness is highlighted by their low ranks as compared to the other subindexes. The low ranking of 90 is attributable to the very weak performance with respect to institutions, where the country ranks 115th, below all comparator countries except Russia and Argentina. This result is particularly worrying as well-functioning institutions provide an important base for economic reform. Chapter 3.1 analyses the institutions pillar in more detail.

Among the pillars that make up the efficiency enhancers subindex, the efficiency of the goods market and technological readiness stand out for their weak assessment. Here, Ukraine is the last but one and the last country, respectively, among the comparators, pointing to severe weaknesses in these two areas.

A comparison with the average of countries with a similar income in Figure 2.2 (countries transitioning between development stages 1 and 2, blue line) underscores these findings and highlights a number of strengths. Ukraine has the advantage of a large internal market coupled with high exports as a percentage of GDP, and a fairly good higher education and training system. It also displays slightly above-average labor market efficiency and is positioned somewhat better than its peers with respect to health and primary education.

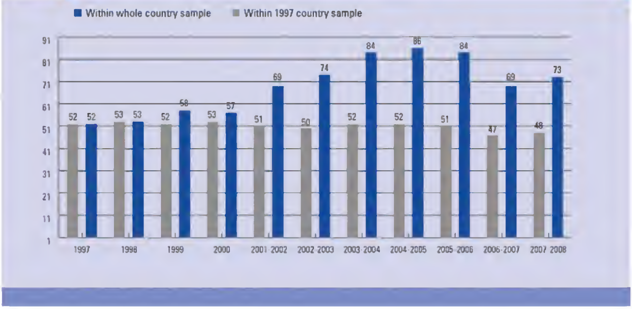
The same chart highlights Ukraine's main weaknesses compared to its peers. Institutions, infrastructure and macroeconomic stability are significantly less developed than in peer countries around the world. The low ranking on the basic requirements pillar is attributable to these results. Considering the high weight of this subindex in the overall index score and the weak performance in these three areas, any successful reforms in one of these fields are likely to significantly upgrade Ukraine's competitiveness and should therefore be prioritized.

The Executive Opinion Survey asks business leaders to assess the most problematic factors for doing business. Out of a list of 14 factors they are asked to pick the five that have a most serious bearing on their economic activity in the country. The responses provided by Ukrainian business leaders in the years 2004 and 2007 are found in Figure 2.3.[3]

The top six most problematic factors for doing business can be grouped into three categories of issues: government and policy instability, corruption and tax administration. Government and policy instability, although they touch on different issues, are mentioned in 25.7% of the responses as a major impediment. Policy instability is the most serious problematic factor with almost 15% of responses, and government instability is the fourth most important factor with over 10%.

Interestingly, although the Ukrainian economy has shown significant resilience to policy instability since 2004 as it continued to grow at very high rates, business perceives the instability of the political situation as a major impediment. When comparing the results with the most problematic factors for doing business in 2004, these

Figure 2.4 Evolution in Ukraine's competitiveness ranking, 1997-2007



two areas only accounted for 11.1% of all responses. The political instability that has shaken the country since the Orange Revolution has considerably destabilized consumers and the business sector.

Corruption is considered the second most important single impediment to doing business, indicated in 14.2% of all the replies. If taken together with inefficient bureaucracy, which ranks at 6th, this means that issues related to administrative capacity constitute one of the main problems facing the country's businesses. The third area that completes the top six factors is the tax administration, both in terms of tax rates and tax regulations. Although tax rates have been lowered, opaque and overly complicated tax regulations that allow for loopholes persist, hampering the country's competitiveness.

The three factors that one would expect to be on the top of the list, as they are among the weaknesses of the Ukrainian economy, are inflation, access to finance and infrastructure. However, these factors are not indicated as being particularly problematic.

2.3 Evolution of Ukraine's competitiveness over the past decade

Since Ukraine entered the World Economic Forum's competitiveness rankings in 1997, the ranking methodology has undergone two significant changes. The first was in 2001, when the Growth Competitiveness Index developed by Professor Jeffrey Sachs was introduced, and the second in 2004, when the Global Competitiveness Index by Professor Xavier Sala-i-Martin was presented. Over this period, many countries were added to the ranking, making it the most comprehensive exercise of this kind worldwide. These two facts severely limit the comparability of our competitiveness rankings over time. While we can easily account for the sample size by presenting the results based on the 1997 group of countries, the changes in methodology must be kept in mind when interpreting the data.

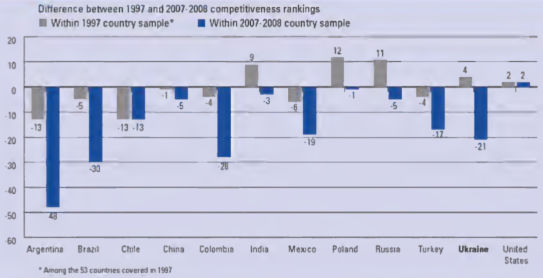
Over the past decade, Ukraine's position in the competitiveness rankings has remained remarkably stable in the constant sample of countries, improving by a few positions from 52 in 1997 to 48 in 2007, as can be seen in Figure 2.4. When Ukraine entered the sample in 1997, it was the last but one out of 53 nations covered at this point in time. Between 1997 and 2005, its rank improved by only one position and then jumped between 2005 and 2006 from 51st to 47th place. This jump was most probably the result of a more positive outlook capturing more optimistic expectations by business leaders towards the business environment following the 2004 political changes.

A look at the changes in rankings for the different countries over the past decade represented in Figure 2.5 shows that the evolution of Ukraine's competitiveness rankings has remained behind the country's potential. Countries in the region, such as Poland and the Russian Federation, have improved significantly in the constant sample, by 12 and 11 ranks respectively. But most of the other countries, in particular in Latin America, have dropped many positions. Chile, for example, despite strong improvements in the area of macroeconomic policy, has lost 13 positions overall. Turkey has also lost four positions over the same time period.

2.4 Conclusions

This chapter has provided an overview of Ukraine's position in the Global Competitiveness Index. It compared the performance of Ukraine against the sample of countries covered by the Global Competitiveness Report, identified

Figure 2.5 Comparator countries' ranking over time



* Among the 53 countries covered in 1997

strengths and weaknesses, and discussed the Evolution of Ukraine's rankings over time.

Although Ukraine is less competitive than most of the central and eastern European countries, it surpasses a number of its fellow CIS members. However, over the past 10 years, despite considerable reform efforts, Ukraine's competitiveness assessment has not improved significantly, unlike other counties in the region, such as Poland or Russia.

To more fully utilize its competitive potential, Ukraine needs to exploit the three advantages it displays when compared to the average performance of its peer countries: its large market size, its still relatively well educated population and the country's good capacity for innovation.

In line with its stage of development, improving the country's competitive position will require reforms in the area of basic requirements and efficiency enhancers. The major weaknesses are to be found in these areas. In particular institutions, infrastructure and the macroeconomic environment do not perform as well as in peer countries. Deficiencies in these areas will require major reform efforts.

The next chapter analyses in detail the competitive strengths and weaknesses based on the structure of the Global Competitiveness Index.

Notes

1 The group of CIS member countries excludes Belarus, currently not covered by *The Global Competitiveness Report*.

2 Ukraine depends on imports to meet about 75% of its annual oil and natural gas requirements. A dispute with Russia over pricing in late 2005 and early 2006 highlighted the dependency on energy supplies as it led to a temporary gas cut-off during the winter. Ukraine was forced to accept a doubling of the price of gas, which imposed an additional cost estimated at US$ 1.4 to US$ 2.2 billion on the Ukrainian economy.

3 These questions were introduced in 2004, so this is the earliest data available.

CHAPTER 3

Ukraine's Performance across the Twelve Pillars of Competitiveness

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The overall Global Competitiveness Index (GCI) rank provides valuable information on a country's competitiveness and enables an informed comparison with selected peer countries and within the large sample of countries covered by the GCI. By grouping the variables into 12 pillars and providing a detailed account of how a country fares on each of the pillars and variables, the GCI also reveals a country's competitive strengths and weaknesses. This provides valuable information for public-private dialogue and policy decisions.

Following on the benchmarking analysis of the overall GCI results in the previous chapter, this chapter of the report analyses Ukraine's performance pillar by pillar, each section corresponding to one pillar. We detail Ukraine's current performance and how the country has fared over the past decade. Where relevant, we benchmark the results against those of other countries and regions. Also featured in this chapter are best-practice cases of countries that have improved within a short period of time on specific aspects.

The chapter follows the structure of the 12 pillars of the GCI: institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market efficiency, technological readiness, market size, business sophistication and innovation.

3.1 Institutions

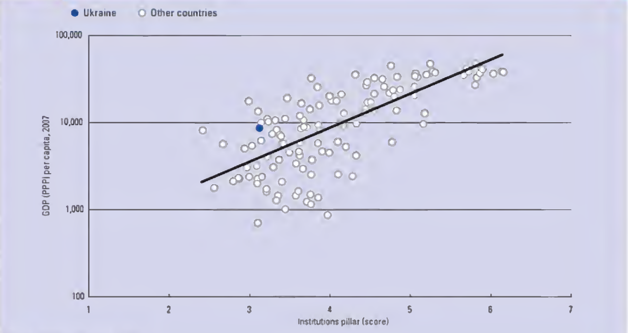
The institutional framework is a system of rules that shape incentives and define the way economic agents interact in an economy. Because it influences investment decisions and the organization of production, the institutional framework has a strong bearing on competitiveness and growth, as well as on the distribution of wealth in a country.

Institutions are at the core of a market economy. Clear evidence exists that an efficient and well-functioning institutional framework is conducive to economic development.[1] Figure 3.1.1 depicts the strikingly close relationship between country performance in the 1st pillar (horizontal axis) and economic wealth (vertical axis).[2] The correlation between the two indicators is as high as .82. Given the importance of institutions for growth, for many transition economies the reform of the institutional framework has been one of the most difficult and most important aspects of the transition process.

The institutions pillar is one of the four pillars that make up the basic requirements subindex of the GCI. According to the concept of stages of development introduced in Chapter 1, the importance of these pillars varies depending on a country's level of development. For economies in the most basic stage of development – the factor-driven stage – improving the quality of institutions can still lead to significant productivity gains, compared with more advanced economies.

The authors would like to thank Arsene Panov for his contributions to sections 3.1 and 3.2 of this chapter.

Figure 3.1.1 Quality of institutions and GDP per capita



Source: World Economic Forum; IMF 2007d

Ukraine's performance in the institutions pillar is detailed in Table 3.1.1. At the pillar level, the country ranks a disappointing 115th in *The Global Competitiveness Report (GCR)* sample made up of 131 countries. Despite an increase in its score from 3.0 to 3.1 since 2005, it has lost 19 places over this period.[3] Other CIS members do only slightly better as reflected in CIS' low median rank of 92.[4] Among CIS countries, Ukraine precedes only Russia (116th) and the Kyrgyz Republic at a rock-bottom 127th rank. Against these results, neighboring EU countries appear farther away than ever, even though the median rank of EU Accession 12 is fairly low at 58.5. Serious institutional deficiencies subsist in some countries, particularly in Bulgaria (109th) and Romania (94th). The performance of Malta (31st) and Estonia (34th) brightens the picture somewhat. The poor results achieved by many eastern European countries are not surprising given that many of them had to rebuild their institutional framework from a low base following the collapse of the communist system.

In addition to public institutions, the pillar assesses the quality of private institutions, which accounts for 25% of the pillar score (see Table 3.1.1). Here, Ukraine's performance is even grimmer (see Figure 3.1.2). At 127th, the country is one of the weakest performers in the entire sample, only coming in ahead of Bangladesh, Chad, Kyrgyz Republic and Timor-Leste.

Public institutions

The pillar's public institutions component, in which Ukraine ranks 107th, looks at the quality of public institutions relevant to the functioning of an economy and covers five aspects: property rights, ethics and corruption, undue influence, government inefficiency and security.

Table 3.1.1 Ukraine's performance in the institutions pillar

Indicator	GCI 2007–2008 Rank (out of 131)	GCI 2007–2008 Score (1–7)
1st pillar: Institutions	**115**	**3.1**
A. Public institutions	**107**	**3.0**
1. Property rights	117	3.1
Property rights	118	3.3
Intellectual property protection	108	2.7
2. Ethics and corruption	95	2.5
Diversion of public funds	85	3.2
Public trust of politicians	107	1.8
3. Undue influence	110	2.6
Judicial independence	111	2.5
Favoritism in decisions of government officials	97	2.6
4. Government inefficiency	119	2.8
Wastefulness of government spending	111	2.6
Burden of government regulation	104	2.7
Efficiency of legal framework	112	2.8
Transparency of government policymaking	119	3.1
5. Security	92	4.3
Business costs of terrorism	66	5.4
Business costs of crime and violence	72	4.4
Organized crime	97	4.2
Reliability of police services	105	3.1
B. Private institutions	**127**	**3.3**
1. Corporate ethics	128	3.1
Ethical behavior of firms	128	3.1
2. Accountability	125	3.6
Strength of auditing and reporting standards	118	3.5
Efficacy of corporate boards	101	4.2
Protection of minority shareholders' interests	127	3.1

Figure 3.1.2 Results for Ukraine and selected regions in the institutions pillar and its components

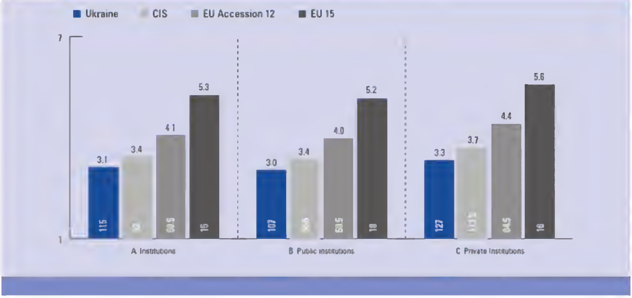
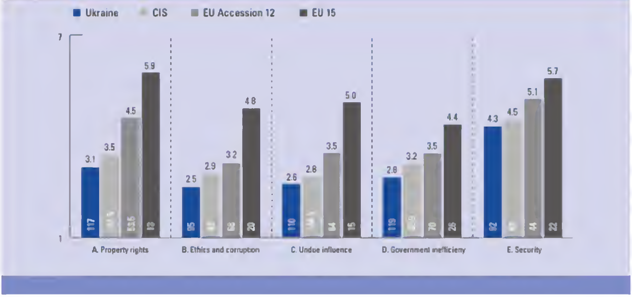


Figure 3.1.3 Public institutions' five categories



Ukraine ranks below the 90th mark in the five categories (see Figure 3.1.3).

Property rights

The protection of property rights is a key feature of any market economy. Adequate and efficient registration, protection and enforcement reduce the risk of expropriation, which assures investors that their investments are protected. In Ukraine, property rights for intellectual and physical property as well as financial assets are insufficiently protected. With a rank of 117 and a score of 3.1, the country actually is closer to the worst performing country in the sample, Venezuela (score of 2.2), than to the EU Accession 12 average (score of 4.6). Ukraine precedes only two other CIS members, Kyrgyz Republic (118th) and Russia (119th). Diagram A in Figure 3.1.3 shows the considerable gap between CIS members and EU countries. The country fares somewhat better on the protection of intellecutal property rights (108th rank), than on general property rights (118th).

The legal basis for the protection of property rights dates back to 1991 when the Law of Ukraine on Ownership introduced the concept of private property ownership, which did not exist in the Soviet Union. Yet the system of property rights remains underdeveloped, in particular with respect to financial assets and real estate. Registration of property over financial assets is ambiguous and this has led to cases of unresolved ownership of companies. At the same time, land registration is costly and cumbersome. This situation inhibits investment and the development of equity markets and real estate markets.[3] The situation is exacerbated by a judiciary that does not have an adequate capacity to enforce existing laws.

In recent years, under the Partnership and Cooperation Agreement concluded with the European Union, Ukraine agreed to implement certain EU directives in the area of

Box 3.1.1 Institutional framework for fighting corruption in Ukraine*

The battle against corruption requires action by multiple constituencies and stakeholders willing to push for greater transparency, accountability and integrity. Until recently, according to the corruption assessment carried out by Management System International for USAID, there was no single institution in the executive branch or any cross-agency institution in charge of fighting corruption in Ukraine. Historically, this role belonged to the Coordination Committee on Combating Corruption and Organized Crime. In 2005, the responsibility was transferred to the National Security and Defense Council, without substantial results. There are several governmental institutions whose mission it is to oversee the executive branch. Some of them are directly involved in monitoring corruption abuses.

The Parliament has overseen issues of corruption since 1992. Since 1994, its permanent Committee Against Organized Crime and Corruption has been very active in promoting anti-corruption policies and initiating new legislation. Among other functions, it reviews governmental and other annual reports on corruption. The Accounts Chamber is an independent governmental oversight institution that controls the finances and the performance of all governmental programmes and institutions. It also reviews how legislation is implemented. The Main Control and Revision Office of Ukraine under the Ministry of Finance conducts financial audits of budget expenditures.

* Based on Management System International and USAID 2006

intellectual property (IP) rights. However, these commitments have failed to produce tangible results.[6] Ukraine has yet to implement specific legislation on the protection of these rights as pertains to the media industry, where a legal vacuum persists. Overall, law enforcement related to intellectual property remains cumbersome and inconsistent as courts lack the capacity to deal with IP related issues.

The adverse consequences for Ukraine of such a negative perception regarding protection of private property must not be overlooked. The fear of being deprived of property contributes to a climate of generalized uncertainty and distrust, causing investors and entrepreneurs to reconsider investment decisions and to look for more propitious business locations in other countries.

Ethics, corruption, and undue influence

With respect to ethics and corruption, the general impression among the Ukrainian business community is equally negative. Corruption is pervasive and often results in the diversion of public funds, as reflected in the fairly low score (3.2) and rank (85th) on this indicator.[7] The government is aware of this problem and has created institutions and introduced measures to fight corruption (see Box 3.1.1), yet it remains endemic, as highlighted in Box 3.1.2.

Given the high levels of corruption, it is not surprising that business leaders have little trust in politicians. When asked to rate the trust in the financial honesty of politicians, Ukrainian participants in the Executive Opinion Survey assign a score of 1.8, corresponding to the 110th rank. The very same concerns exist as to the extent of undue influence. Although judicial independence exists in principle, in practice the judicial and political powers are not sufficiently separated and judges are subject to pressure by political and vested interests. This is reflected in the low 111th rank for the independence of the judiciary. Overall, the judiciary is underfinanced and not appropriately staffed, which makes it even more prone to capture by vested interests.

Government inefficiency

Government inefficiency – the fourth category – constitutes a major impediment to Ukraine's competitiveness as reflected in the low 119th rank in this category. This poor assessment has a number of causes. The regulatory environment is perceived as burdensome, as demonstrated by Ukraine's 104th place. Firms are subject to too many rules and procedures, many of which are unecessarily complicated. The results of the EBRD-World Bank Business Environment and Enterprise Performance Survey for 2006 suggest that the situation in Ukraine has been improving over time, but that the cost of regulations and red tape in Ukraine, in terms of both management time and informal payments to officials, remains well above the average for CIS states and far higher than the average for the Europe/central Asia region as a whole.[8]

For example, construction permits can involve up to 50 separate steps and take up to 750 days, while registering property in 2006 involved 10 procedures and took 93 days on average.[9] Excessive red tape, however, is only part of the problem. A survey of entrepreneurs by the OECD[10] shows that businesses continue to face major problems as a result of the instability of the regulatory framework, and inconsistency in the interpretation and administration of regulations, particularly at the local level. The combination of excessive regulation, frequent rule changes and inconsistent application make it extraordinarily difficult for private businesses to comply with regulations. This also introduces risk and uncertainty related to the regulatory burden. At the same time, this situation leaves considerable discretion in the hands of officials dealing directly with businesses, thereby opening the door to corruption.

Overall, the public administration in Ukraine is large, inefficient, often unresponsive to either citizens or elected politicians, and plagued by corruption. A recent OECD-EU assessment of seven aspects of Ukraine's governance system found that they continue "to operate according to modes of organization, practice and thinking" inherited from both the Soviet era and the chaotic decade of the 1990s.[11] Many of the challenges related to governance stem from inadequate skills among civil servants, many of whom were trained under the old Soviet system. The notion of democracy and accountability, customer orientation, or appropriate decision-making tools were absent from training curricula, preparing civil servants to execute decisions rather than to make or question them.

As a result, the politics-administration nexus remains extremely vague and the civil service does not yet function as a professional corps. Regulations are vague concerning its scope and such issues as the status of civil servants, including recruitment, appraisal and advancement. In addition, remuneration arrangements are extremely complex and non-transparent. All these factors allow for a high degree of arbitrariness and informality within the administration, and enhance the significance of personal and political connections.

Given the inefficiencies of public administration, it is not surprising that the Ukrainian business community considers government spending as essentially wasteful, ranking the country 111th on this indicator. This poor performance also reflects the structure of government expenditures, a large share of which is used to subsidize inefficient state-owned enterprises. Sections 3.3 and 3.6 discuss this issue in further detail.

Serious issues also persist regarding the degree of transparency in government policymaking, on which Ukraine ranks 119th. A lack of clarity with respect to the attribution of functions and responsibilities reduces both transparency and accountability in the policymaking process. Fragmentation, opacity and weak lines of accountability also tend to favor the "capture" or influence of state institutions by powerful special interests. All of these problems have been exacerbated by the constitutional uncertainty of the last two years – ultimate lines of authority and accountability are both contested and unclear, further reducing the prospects for inter-institutional coordination and integrated policymaking.

The legal framework is perceived as largely inefficient for solving business disputes, resulting in a low 112th rank on this indicator.[12] Even more worrisome is that over the past three years, the legal framework has continuously deteriorated from a rank of 82 in 2005. An insufficient legal framework for business can undermine reforms in many areas that rely on enforcement, such as bankruptcy laws.

Security

The last area of the public institutions component is security. A safe environment, relatively free of petty and organized crime is obviously beneficial for companies (see Diagram E in Figure 3.1.3). In this dimension Ukraine, 92nd, performs better than in the other categories. Its score has improved markedly over the past three editions, up from 3.8 to 4.3. The fact that this relatively high score corresponds to a low 92nd rank reflects the observation that many other nations do relatively well in this area. For example, the European Union's average is as high as 5.7. One main concern in Ukraine is the low reliability of police services to provide protection from crime (score of 3.1). To a certain extent, this result reflects a generalized lack of trust in civil servants – whatever their role. However, the business community does not seem to judge the police as severely as their politicians.

Private institutions

The importance of private institutions to foster competitiveness was highlighted by a number of high profile corporate scandals in recent years in the US, but also in Europe and Asia. Strict accounting and reporting standards are key for preventing fraud and mismanagement, and maintaining investor confidence. In this context the use and enforcement of international standards can increase foreign direct investment. Equally, well developed corporate governance standards contribute to building the confidence necessary for the development of stock markets and sophisticated financial products.

Among all of the major aspects assessed by the GCI, Ukraine, at 127th place, fares worst in this area, which captures the quality of corporate governance standards. The subpillar takes into account two dimensions – corporate ethics and corporate accountability.

Corporate ethics

In Ukraine, businesses assess the ethical behavior of firms extremely poorly, earning Ukraine an unenviable 128th rank, down 16 places from the previous year. Vynoslavska et al. (2005) confirm through surveys of Ukrainian and US companies that business leaders in Ukraine demonstrate less stringent ethical behaviour compared to their US counterparts and trace these differences to the transition experience of Ukrainian firms. Such a poor assessment of business behavior by business itself reflects a deeply-rooted lack of trust and confidence. In such an environment, business transactions are more costly as they entail additional costs for verifying and checking the credibility of business partners.

Accountability

Overall accountability of businesses, the second component of the subpillar, is assessed only slightly better. Ukraine ranks 125th in this area, a clear decline from previous years.

Box 3.1.2 Point of view: Corruption, a Ukrainian phenomenon

OKSANA KUZIAKIV

Institute for Economic Research and Policy Consulting, Ukraine

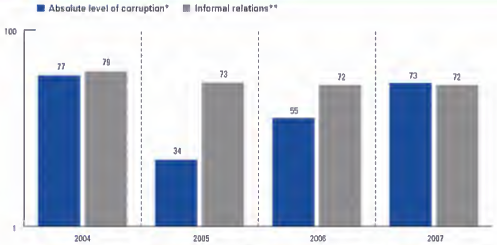
Corruption is a common practice in Ukraine. According to a 2007 survey, 67% of Ukrainians who have dealt with government officials say that they have been directly involved in corrupt transactions of some sort.[1] According to the Quarterly Enterprise Survey (QES), conducted by the Institute of Economic Research and Policy Consulting (IERPC), more than 73% of respondents reported bribery to be a common instrument for "smoothing" dealings with public officials.[2]

The results of the QES suggest that corruption is again on the rise in Ukraine, and has returned approximately to 2004 levels, prior the Orange Revolution. At that time, bribes represented up to 6.5% of the annual sales of a company, compared to 1.9% in 2003. In 2005, the situation improved as the administration of newly elected President Viktor Yushchenko took power and Prime Minister Yulia Tymoshenko declared her intention to fight corruption. The amount of bribes decreased dramatically from 6.5% to 1.4%. Corruption then started picking up again, with bribes averaging 3.6% of annual sales in 2006 and 4.2% in 2007. Small and medium size firms face a higher "bribe tax" than larger corporates.

Yet despite these high figures, the business community is not sure that paying bribes actually helps bypassing red tape, which itself constitutes a major impediment for conducting business in Ukraine. In 2003, about 25% of Ukrainian enterprises expected bribery to produce no effect. In 2005, the percentage peaked at 66% up from 30% in 2004. In 2007 it was 53%. The figure is the highest among large firms of which 71.5% of respondents were unsure whether after paying bribes the "services" would actually be delivered as agreed.

When considering corruption in Ukraine, one cannot overlook the role of informal relations with government officials. Businesses consider it important to establish strong working relations with those state bodies that have a say in enacting and enforcing business-related rules. Indeed, 72% of respondents consider having informal relations with the representatives of public authorities to be important for the success of their business. Among government officials, the State Tax Administration (STA) has been consistently cited as the most important with which to have informal relations. As Table 1 shows, in 2007 some 67% of respondents considered having informal relations with STA officials as a "very important" or "important" determinant of success, followed by local authorities and the police. The QES also shows that large companies tend to have closer relations with state bodies than SMEs and think that they are more important for success. Since 2003 the perceived importance of informal relations increased drastically to peak at 79% in 2004. It has been hovering around 70% since then. Another striking result from the QES 2007 is that over 50% of managers say that turnover of civil servants has an impact on the success of their firms. This is further evidence of the importance of being well connected.

Figure 1 Corruption in Ukraine



* Percent of respondents who believe, or strongly believe, that bribery is a common instrument for "smoothing" dealings with government officials
** Percent of respondents assessing informal relations with government officials as "important" or "very important"

Source: Institute for Economic Research and Policy Consulting, Quarterly Enterprise Survey 2004–2007

Table 1 Importance of informal relations with state authorities for business success*

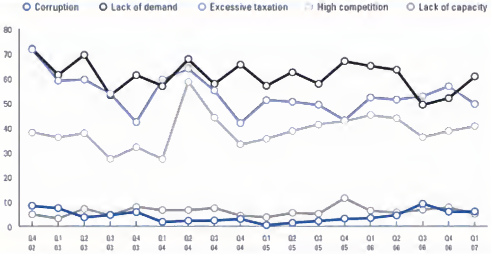
	1999	2003	2004	2005	2006	2007	2007 vs. 2006
STA	50.8	52.4	74.5	59.1	64.1	67.3	3.2
Local authorities	43.4	45.3	57.9	56.9	59.4	60.7	1.3
Police	36.8	39.6	66.2	52.9	52.9	56.4	3.5
Central government	31.1	33.6	28.6	44.0	51.9	50.8	1.1
Oblast authorities	41.0	42.1	34.4	58.5	46.1	46.2	0.1
Total	**50.0**	**50.0**	**78.9**	**73.2**	**72.0**	**72.0**	

* Percent of respondents that assess relations as "important" or "very important".

Source: Quarterly Enterprise Survey, Institute for Economic Research and Policy Consulting, 2004-2007

There exists ample evidence that corruption is widespread in Ukraine. At the same time, corruption is perceived to be a part of everyday life and people tend to consider it as normal practice. Over half of Ukrainian citizens believe that corruption is justified in most situations to get things done.[1] Indeed, the QES indicates that despite the pervasiveness of bribing among business, corruption is not even among the top 10 obstacles to businesses growth. It actually ranks 15th, way behind factors like "excessive taxation", "lack of demand" and "high competition" (see Figure 2). Corruption has become such a common practice that Ukrainians no longer consider it an issue and actually rely on it extensively. This is unfortunate but should by no means be seen as a reason for inaction. Corruption is a major obstacle to economic development and it should be combated vigorously.

Figure 2 Selected impediment to business growth, percent of respondents



Source: Institute for Economic Research and Policy Consulting, Quarterly Enterprise Survey 2004-2007

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1 USAID, Millenium Challenge Corporation and Management Systems International. *Promoting active citizen engagement in combating corruption in Ukraine* (May 2007). Available at http://www.pace.org.ua/images/press_rel_survey_res.doc.

2 Quarterly Enterprise Survey, Institute for Economic Research and Policy Consulting, available at www.ier.kiev.ua/qes.

3 See note 2 above.

Ukraine also receives bad marks for its underdeveloped mechanisms to protect minority shareholders' interests. It appears close to the bottom of the ranking at 127th, two places behind Russia. Ukrainian law does not grant minority shareholders of large companies sufficiently strong voting rights to effectively protect their interests. In this respect, the introduction of cumulative voting rights would most likely help to improve the situation.[13]

Equally, the auditing and reporting standards regarding the financial performance of companies are weakly defined and enforced, as reflected in the low ranking on the relevant variable (118th). So far, Ukraine has not adopted international financial reporting standards (IFRS), which are binding for companies in the EU. Ukrainian companies are required to disclose their financial report only nine months after the end of the fiscal year, which does not give shareholders the opportunity to familiarize themselves with the financial situation before the shareholders meeting that usually takes place about six months after the end of the fiscal year. The law also does not require assets to be valuated at market prices before being sold or acquired. This opens the door to asset stripping, particularly in companies dominated by a few shareholders.

Overall, supervisory boards have little power over corporate boards, thereby limiting the accountability of managers for their actions. On the related variable assessing the efficiency of corporate boards, the country ranks a low 101st. Here, the problems lie in the very weak legal basis for control of management by supervisory boards. Importantly, supervisory boards do not have a legally required minimum responsibility. The law does not require them to appoint or fire management boards or to approve large asset transfers, which significantly limits control over managers and creates additional opportunities for fraudulent activities.

A report by the European Bank for Reconstruction and Development assesses the effectiveness of corporate governance and analyses the details behind the weak performance across central and eastern Europe and the CIS.[14] For Ukraine, the report concludes that the lack of effectiveness and enforceability of the legal framework for corporate governance is a particular problem. In light of Ukraine's aspiration to join the EU, corporate governance standards must be brought in line with international norms in the process of integration. However, significant improvements to corporate governance will require major reforms and a huge effort in terms of training of experts, as well as strengthening capacity in regulatory institutions and the courts.

3.2 Infrastructure

Physical infrastructure plays an important role in enhancing the growth prospects of an economy. As shown by various empirical studies, both the level and quality of infrastructure are important in raising private sector productivity and investment rates (see Chapter 1). The GCI specifically emphasizes three types of infrastructure considered particularly important for business: transport infrastructure, power and telecommunications. As a basic feature of any economy, the infrastructure pillar enters the basic requirements subindex of the GCI.

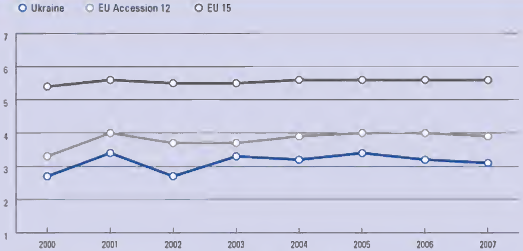
Table 3.2.1 Ukraine's performance in the infrastructure pillar in international comparison

Country	2nd pillar: Infrastructure Rank	Score
Germany	1	6.7
France	2	6.5
Singapore	3	6.4
Switzerland	4	6.3
Hong Kong SAR	5	6.2
United States	6	6.1
Denmark	7	6.1
Canada	8	6.0
Japan	9	6.0
Finland	10	5.8
Malaysia	23	5.3
Chile	31	4.6
Estonia	36	4.4
Lithuania	48	4.1
China	52	4.0
Croatia	53	3.9
Hungary	54	3.9
Turkey	59	3.7
Azerbaijan	60	3.6
Mexico	61	3.5
Russian Federation	65	3.5
India	67	3.4
Kazakhstan	71	3.2
Ukraine	**77**	**3.1**
Brazil	78	3.1
Poland	80	3.0
Argentina	81	3.0
Romania	100	2.6

Prolonged stagnation towards the end of the Soviet era and under-investment in the 1990s have left much of Ukraine's infrastructure in a dire state. The country ranks 77th in the GCI's infrastructure pillar, and remains relatively far from EU standards. It precedes Poland (80th), Bulgaria (84th), Romania (100th), Brazil (78th) and Argentina (81st), but trails all the other EU Accession 12 countries, as well as three of the BRICs (Russia, China, India). Ukraine also ranks 77th, as to the quality of general infrastructure with a score of 3.1 – a small improvement since 2000 (see Figure 3.2.1).

The good assessment of the railroad infrastructure is particularly noteworthy in Ukraine, with a rank of 31st globally, ahead of Hungary and Poland, but behind Russia. As agriculture, extraction industries and manufacturing (ferrous and nonferrous metals, machinery and transport equipment, chemicals, and food processing) account for a large portion of Ukrainian GDP, a good railroad infra-

Figure 3.2.1 Quality of infrastructure*, 2000-2001



* General infrastructure in your country is 1 = underdeveloped, 7 = extensive and efficient by international standards
Note: Survey results in the figure are different from those entering the GCI. See Chapter 1 for details about the calculation of the GCI results

Source: World Economic Forum, Executive Opinion Survey

Table 3.2.2 Ukraine's performance in the infrastructure pillar in detail

	2007-2008 (out of 131)		2006-2007 (out of 122)		2005-2006 (out of 114)	
Indicator	Rank	Score	Rank	Score	Rank	Score
2nd pillar: Infrastructure	**77**	**3.1**	**71**	**3.1**	**59**	**3.5**
A. General infrastructure	**77**	**3.1**	**67**	**3.3**	**68**	**3.3**
Quality of overall infrastructure	77	3.1	67	3.3	68	3.3
B. Specific infrastructure	**75**	**3.0**	**70**	**3.0**	**53**	**3.7**
Quality of roads	116	2.2	103	2.2	n/a	n/a
Quality of railroad infrastructure	31	4.0	29	4.1	21	4.6
Quality of port infrastructure	86	3.4	63	3.5	54	3.7
Quality of air transport infrastructure	116	3.2	103	3.2	86	3.7
Available seat kilometers	59	158.9	61	144.9	n/a	n/a
Quality of electricity supply	88	3.9	83	3.7	79	3.8

structure contributes to maintaining the competitiveness of these industries. Some other countries with a similar GDP structure and with higher per capita income levels, such as Romania or Argentina, rank below Ukraine on this indicator. However, the sector remains in state hands and liberalization could further contribute to increasing the efficiency of the railroad transport system. Introducing an independent regulator of the sector would also help.

Over the past few years, the increasing share of rail freight due to buoyant commodity trade has boosted the financial health of railways in Ukraine. The country has benefited from its geographic position as a transit route, with most of the transit traffic going from Russia to the Black Sea ports and involving heavy commodities such as oil and iron ore. However, the cost effectiveness of passenger railway traffic decreased as cross subsidization of passenger railway traffic through freight decreased. The port facilities and inland waterways have been assessed at the 86th rank worldwide, down from the 63rd position in the previous year. This drop in rank reflects only a small change in score over this time period.

At the same time, Ukraine's performance on indicators measuring the quality of roads and air transport (116th rank in both cases) is dismal and indicates the need for investments to upgrade the quality of highways and airport facilities. Ukraine has relatively low road use and experienced a sharp decline in road freight traffic during the 1990s. This trend, which reflected the slow and comparatively prolonged transition period, has recently reversed. Currently, major road infrastructure projects include a new ring road around Kyiv, a motorway connecting the west with the eastern part of the country, and a toll road from Kharkov to Dnipropetrovsk. Box 3.2.1 outlines the current challenges and opportunities in the road transport sector in detail.

The poor assessment of air transport infrastructure is at odds with the intensity of air traffic to and from Ukraine. In terms of availability of seat kilometers, Ukraine ranks a relatively high 59th, although the business sector assesses the quality of air transport infrastructure very poorly at 116th rank worldwide.[11] The current upgrading of air transport infrastructure includes the reconstruction of

Box 3.2.1 Point of view: From accumulating loans to profit-yielding investment

DR VOLODYMYR NIKITIN, Director
ILDAR GAZIZULLIN, Senior Researcher
International Center for Policy Studies

Ukraine has a high potential for investment in transport infrastructure

Ukraine can become a powerful transport center for the European continent. Creating an enabling environment for developing competitive multi-modal transport routes through Ukraine can attract transit flows from Asia to Europe. At the moment, the major part of transport flows in Ukraine and the Black Sea region consists of raw materials, while the future will belong to the transportation of goods with high value-added.

The services sector in Ukraine is developing unevenly. Telecommunications, real estate, the financial sector, and the hotel business are the main targets for investment in the economy. The development of the transport sector is lagging behind.

Today, Ukraine does not have a single implemented project for building and maintaining roads on the basis of a public-private partnership. Negotiations by the Ministry of Transport and Communications with construction companies from China, Spain, Turkey and France did not yield much success. To date, large-scale and long-term investment has not been channeld into this sector. Large investments face risks related to imperfect legislation on the allotment of land and financial terms and conditions of concessions. So far, the country has not managed to minimize these risks.

Condition of Ukraine's infrastructure close to disastrous

Neglected road management reduces the transit appeal of Ukraine. The quantity and especially the quality of municipal and inter-city motor roads do not meet the requirements of trans-European transport corridors and the country's rapidly growing stock of vehicles. According to the State Motor Road Service of Ukraine, the country annually foregoes approximately US$ 1 billion worth of transit business due to unsatisfactory condition of roads. Out of 16,000 kilometers of national roads, only 2,200 kilometers meet the standards of a motorway.

Both building new roads and maintaing existing infrastructure is urgent. For example, in the country's western oblasts (regions) that are important for transit, investment in road infrastructure accounts for just one-third of the planned figure. As a result, the quantity and the quality of repaired roads do not meet the set objectives. One of the bottlenecks in road infrastructure is the poor state of bridges as most were built during 1960s and 1970s.

The regulator in Ukraine has attracted little investment for developing infrastructure, notably less than its neighbors. Russia has achieved significantly more in terms of improving infrastructure, for example in terms of modernizing and increasing the carrying capacity of ports, primarily due to the more active role played by businesses.

The roots of the problems

Road construction is a large business that offers significant opportunities for corruption and theft. As a result, there is a powerful resistance to change on the part of bureaucrats and local, well-connected businesses. The State Motor Road Service of Ukraine is responsible for the entirety of road management. It designs and builds roads and, at the same time, operates them. Imperfect legislation concerning tenders impedes the participation of private capital in the competition for road works contracts.

Another factor hampering the development of this sector is the state's limited understanding of the role of business in infrastructure and in the economy as a whole. The government views the private sector first and foremost as a source of much-needed capital. However, its role as a generator of business projects and a supplier of efficient managers to implement such projects is neglected. The government's key projects related to upgrading road infrastructure are generally funded by large loans from international organizations under state guarantees.

The legislative support for public-private partnership projects is also insufficient to attract investment.

In the opinion of the World Bank, this is the result of the lack of guarantees on the part of the state for covering investors risks, for example, when the planned traffic intensity on a toll road is not achieved.

In addition, there is no opportunity to use other models providing a return on investment, except for collecting direct road tolls. The laws concerning concessions for the construction and maintenance of motor roads that are currently in force do not work in practice.

The government realizes the need for amending the legislation and changing the institutional organization of the system

Currently, the 2012 European Football Championship is the main factor pressuring the government into action. The cost of developing transport infrastructure needed to hold the championship is approximately US$ 25 billion. Such a sum is not available in the state budget. The main source of financing consists of loans that Ukraine started receiving under state guarantees from renowned financial organizations, such as the European Bank for Reconstruction and Development and Morgan Stanley.

In 2007, the government introduced a number of changes to the legislative field. For example, the State Programme for Developing Motor Roads for 2007 to 2011 provides for building roads on the basis of concessions, and also for reconstructing roads with the help of loans. Amendments to the law on concessions for the construction and maintenance of motor roads provide for instituting new forms of concessions for reconstruction, repairs and maintenance of motor roads. Finally, the government is examining the possibility of outsourcing the construction capacity currently with the State Motor Road Service to private companies on the basis of tenders.

The success of Ukraine's road policy will depend on whether the government will be able to cooperate with business in the process of planning and maintaining transport routes. If this does not happen, there is a real risk that the loans will be used ineffectively and inefficiently. Ukraine needs to take account of a broad range of interests in implementing reforms, including construction companies, operators of infrastructure facilities, and transnational companies seeking new routes for transporting goods. The preparation for and the holding of the 2012 European Football Championship is a chance for Ukraine to draw global market stakeholders' attention and resources to the country's transit potential.

Kyiv's second city airport (Kyiv Zhulyany), which requires more than US$ 40 million of investment, and is due to be completed in 2011.[illegible]

In the coming years, the government plans to attract private funds for public road infrastructure under public-private partnership (PPP) schemes and to create toll roads. To date, the underdeveloped regulatory framework and the lack of market orientation of privately financed infrastructure projects have been hindering such PPP projects.

In the area of telecommunications infrastructure, Ukraine does well on the quantity of available telephone lines, ranking 52nd. The liberalization of the telecommunication market, particularly in the mobile telephony and the Internet sectors, has greatly improved the efficiency and availability of telecommunications services, which today are better than in a number of other ex-Soviet republics. However, in their answers to an Executive Opinion Survey question not included in the GCI, business leaders assess the availability of the telecommunications infrastructure with an average score of 4.7, which is fairly low in international comparison (103rd). This shows that although the penetration rates are fairly good, there appear to be problems in the reliability and quality of fixed telephone lines. Although fixed telephone lines are increasingly being replaced by mobile telephony, they remain important for connecting to the Internet and sending faxes.

Because of the dependence on Russia for oil and gas and the history of energy subsidies, power generation and distribution are very sensitive topics for Ukraine's policymakers (see Box 3.2.2 for details of the gas dispute between Russia and Ukraine). Structural reforms of the energy sector are necessary and would certainly improve the current 88th rank in terms of reliability of energy supply. The sector remains to a large extent in state hands, but Ukraine has privatized portions of the distribution network and an independent regulator has been set up. In recent years, power generation and distribution attracted much private sector investment. Current plans to increase the capacity for power generation include four electricity generating plants in Odessa, which is likely to contribute to improving the situation.

Ukraine is a key transit center for Russian natural gas exports to Europe and its aging natural gas infrastructure is a concern both for European consumers and Russian producers. The fragile state of Ukraine's natural gas transport infrastructure was highlighted by the powerful blast in 2007 that destroyed a significant stretch of the Brotherhood pipeline, one of Ukraine's major transit carriers of natural gas.[17] The main challenges to be addressed are disrepair and under-utilization of capacity. Some of the pipes have been in operation for 20 to 30 years, and repairs were rarely carried out because of a lack of funds. At the same time, capacity is not fully utilized and could be increased through rehabilitating and upgrading the existing infrastructure.

To provide reliable supplies domestically and in Europe will require more investment in the Ukrainian transport network, more international cooperation, and a more transparent energy sector. Ukrainian and Russian state-owned oil and gas companies, Naftogaz Ukrainy and Gazprom, have started work on a new pipeline from Uzhorod to Novopskov that will increase Ukraine's

Box 3.2.2 Gas supply dispute

In December 2007, state-controlled Russian energy giant Gazprom reached an agreement with Ukraine that set the price for Russian gas supplies at the Ukrainian border at US$ 179.50 per 1,000 cubic meters of gas in 2008. Under previous agreements, Ukraine paid US$ 130 per 1,000 cubic meters.

The 2007 agreement also raised the transit fee for gas in Ukraine slightly, to US$ 1.70/1,000 cubic meters, up from the previous rate of US$ 1.60/1,000 cubic meters. Gazprom also charged independent gas producers in Russia US$ 1.70 per 1,000 cubic meters in 2008, a 19% increase over the previous rate. According to European and Russian analysts, the new agreement, which raised the price Ukraine will pay for natural gas by around 38%, to some extent alleviated fears in Western Europe that a price dispute between Russia and Ukraine could lead to a repeat of the stand-off between the two countries in January 2006, when Gazprom temporarily halted gas supplies to Ukraine. Yet, another disagreement arose in February 2008 over the supply scheme involving RosUkrEnergo. The US$ 1.5 billion debt claimed by Gazprom, but rejected by Naftogas of Ukraine, could potentially lead to a new dispute.

Source: Russia Today, 2007; Elektonni Vesti Ukraini 2008

Box 3.2.3 Utility tariffs reforms: Best practices of managing the social costs of utility price increases

Ukraine introduced the Law on Communal and Housing Services in 2004 that requires the regulator to compensate utilities for below-cost tariffs. This policy has provided incentives to local authorities to effectively implement cost recovery tariffs.

However, utility tariff reforms have a significant impact on economically exposed social groups. As highlighted by Gray et al. (2007), utility subsidies in recent years have represented almost 0.8% of GDP in Ukraine, making them one of the most expensive means of reducing poverty. The EBRD recommends using household allowances instead of subsidies to sustain the competitiveness of the utility sector, while building on the best practices in central Europe and other neighboring countries.

Other countries in the region, such as Kazakhstan and Hungary, have already implemented better targeted family benefit programmes to provide cash transfers to poor households. Poland has provided unemployment benefits through housing allowances rather than using energy price subsidies, thus setting the practice of transparent allocation from the budget. In mid-2006, Albania decided to replace the compensation of consumers unable to pay utility bills with a direct cash transfer to socially vulnerable households. In Romania, the introduction of lifeline tariffs (a low rate applied to a quantity of basic consumption) for electricity provided a relatively effective means of targeting the poor and supporting energy efficiency.

Source: World Bank 2007c; OECD 2005

transport capacity to western Europe by 25% at its expected completion in 2009.[18]

The administration of tariffs for electricity for households has been one of the major preoccupations of the government, with several tariff revisions in the past three years. Whereas the non-payment issue and the low cash payment level have been solved, improvements are still in order in the power sector. Tariff reforms and further elimination of the cross subsidization that was stifled by external energy price shocks in 2006 will be beneficial.[19] Inadequate tariffs account for the bulk of the hidden costs estimated in Ukraine (3% of GDP), similar to the situation in Romania and Poland.[20] Box 3.2.3 outlines a few examples of how other countries in the region have dealt with tariff reform in the face of social pressures.

3.3 Macroeconomic stability

The macroeconomic stability pillar captures key determinants that make a country's macroeconomic situation predictable, sustainable and thereby beneficial to the business environment. It is one of the four pillars making up the GCI's basic requirements subindex and for this reason constitutes a particularly important determinant of competitiveness for countries at the earliest stages of economic development, such as Ukraine.[21]

Although it is certainly true that macroeconomic stability alone cannot increase the productivity of a nation, it is equally true that macroeconomic instability severely harms the economy. Keeping inflation, the deficit and debt under control, as well as a narrow interest rate spread and high saving rates, are highly beneficial for the predictability of the business environment and for ensuring the availability of capital for investment at reasonable interest rates.

With its rank of 82 and score of 4.7, Ukraine is in line with the average performance of CIS countries (see Figure 3.3.1). Because of the presence of resource-rich countries, the region offers a very mixed picture.

Energy producers Azerbaijan (23rd), Kazakhstan (25th), and Russia (37th) do well, thanks to very low public indebtedness and high budget surplusses despite surging inflation of some 10%. With the exception of Armenia (57th), all non-oil producing CIS countries rank lower than Ukraine. Tajikistan (127th) and Kyrgyz Republic (128th) appear as absolute laggards, only ahead of Ethiopia, Guyana and Zimbabwe in the overall sample. Ukraine trails all the EU countries bar Romania (84th) and Hungary (107th). Yet the Ukraine-EU gap here is not as wide as in the other pillars.

Despite its low rank, almost all the macroeconomic indicators captured by the GCI are evolving in the right direction. Since 1991 the macroeconomic situation has been improving steadily, despite a dent in the wake of the 1998 crisis. To highlight the progress made by Ukraine, the macroeconomic stability pillar was estimated back to 1995 using the latest data available. The results are reported in Table 3.3.1. Following the crisis, the score starts improving markedly, from 3.0 in 1999 to 4.8 in 2006. As described below in more detail, inflation remains the biggest immediate challenge to Ukraine's macroeconomic stability. The following pages examine Ukraine's performance on each of the five indicators included in the pillar.

In 2006, Ukraine's budget deficit (see Diagram A in Figure 3.3.2) amounted to 1.9% of GDP, down from 4.4% in 2004 and 2.3% in 2005. This corresponds to the 82nd rank globally. The 1998 crisis has not only had negative effects. For example, it has made fiscal policymakers averse to high levels of deficit and debt. The maintenance of fiscal discipline since 1999 has contributed to restoring confidence among investors, and also resulted in a spectacular shrinking of the debt.

However, this rebalancing was chiefly achieved through privatization gains, higher corporate taxes and the reduction of tax privileges and fiscal loopholes, rather than more painful cuts in expenditures, thus avoiding reforms necessary for sustainable improvements. On the contrary, the size of the public sector has been growing steadily over the period and now represents more than 40% of GDP. As a result, despite the undeniable progress described above, there are now growing concerns as to the soundness and sustainability of the government's fiscal policy and its impact on long-term macroeconomic stability.

Public expenditures represent 45% of GDP, up from 37% in 1999. Pledges made during the 2004 electoral campaign included a 50% hike in the public sector minimum wage in the following year and, more importantly, a tripling of pension benefits, resulting in a drastic increase in private disposable income. Although these reforms were certainly socially (and politically) beneficial and boosted consumer demand, they were made with little regard for the long-term financial commitment they represent. In addition, maintaining the fairly high tax burden that penalizes investment and job creation may have longer lasting negative effects on growth than the consumption boom the reforms have brought about.

The expenditures incurred by the new pension regime amount to 15% of GDP, a ratio believed to be the world's highest (IMF 2007b). Indeed, the OECD (2007) deems it unsustainable unless current retirement ages – 55 years for women, 60 for men – are raised.[22] Yet, with a life expectancy of 62 years for men, such a recommendation is simply unrealistic for the time

Figure 3.3.1 Scores for Ukraine and selected regions in the macroeconomic stability pillar

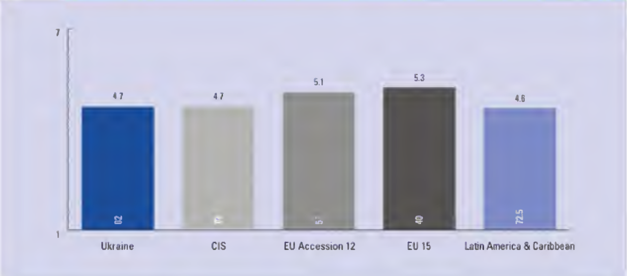
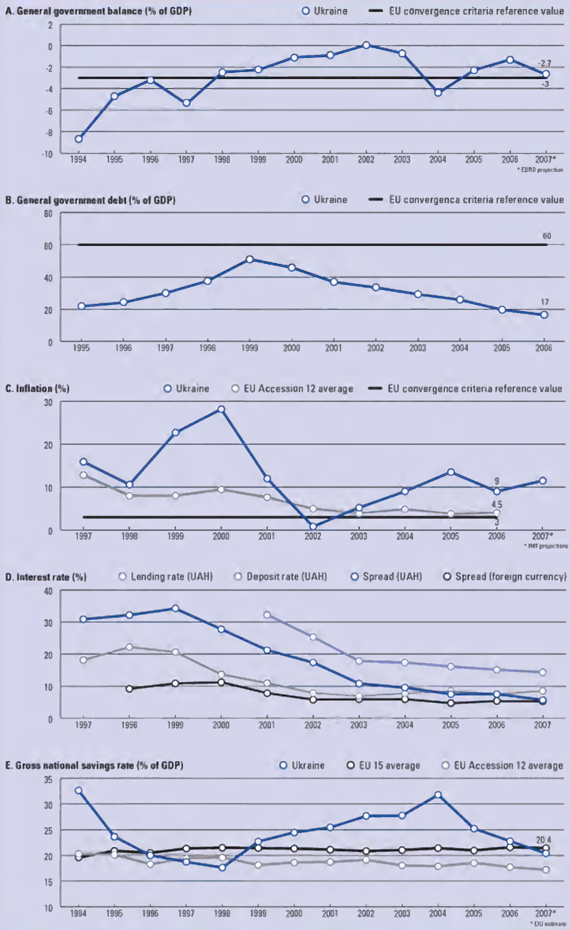


Figure 3.3.2 The five indicators of the macroeconomic stability pillar



Source: authors' calculations; EBRD 2007; IMF 2007d; International Financial Statistics; Bank of Ukraine (situation as of December 14, 2007); EIU 2007; national sources

Table 3.3.1 Estimates of Ukraine's score in the macroeconomic stability pillar

Indicator	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
General government balance (% of GDP)	-4.7	-3.2	-5.4	-2.5	-2.3	-1.1	-0.9	0.1	-0.7	-4.4	-2.3	-1.3
Gross national savings rate (% of GDP)	23.7	20.0	18.8	17.7	22.7	24.5	25.5	27.7	27.8	31.8	25.2	22.8
Inflation (%)	376.4	80.2	15.9	10.6	22.7	28.2	12.0	0.8	5.2	9.0	13.5	9.0
Interest rate spread (%)	52.4	46.3	30.9	32.2	34.3	27.8	21.3	17.4	10.9	9.6	7.6	7.6
General government debt (% of GDP)	21.8	24.2	30.1	37.6	51.0	45.9	36.9	33.5	29.3	25.9	19.7	16.5
4th pillar: Macroeconomic stability	**3.0**	**3.1**	**3.0**	**3.5**	**3.0**	**3.1**	**3.7**	**4.7**	**4.8**	**4.5**	**4.4**	**4.8**

Table 3.3.2 Ukraine's score on the macroeconomic stability pillar assuming various inflation rates

If inflation was…						
%	3.0	5.0	7.0	**9.0**	11.0	15.0
				actual		
…Macroeconomic stability would be						
Score	5.0	4.9	4.8	**4.7**	4.5	4.3
Rank	55	65	75	**82**	92	104
				actual		

being.[23] Another alarming figure is the pensioner-worker ratio which currently stands at .93 – there are 93 pensioners for every 100 workers. To eliminate the deficit of the pension fund and ensure its sustainability, the government must accelerate the transition towards a three-tier pension scheme and discourage early retirement. Currently, a large portion of the public budget is spent on financing the pension deficit. This considerably crowds out investments required in other sectors. In particular, infrastructure, healthcare and education are in dire need of reform and upgrading. Sections 3.2, 3.4, and 3.5 of this chapter discuss these issues in more details.

To finance such ballooning expenditures, the government is left with few options. Experts agree that corporate taxation, which represents 85% of all government revenues, has become excessively burdensome. This means that increasing tax rates is not conceivable.[24] Fortunately, there is still considerable room for improving the tax system administration and the design of the tax system, while broadening the tax base.[25] Moreover, any policy conducive to legal job creation and reducing the gray economy would be most welcome, as it would increase the number of taxpayers, and at the same time address some of the issues related to pensions.

Finally, continued privatization and a lifting of the moratorium on the selling of agricultural land would constitute another important, though non-recurrent, source of revenues. Unfortunately, the political will to undertake these reforms has been lacking recently. The selling of state-owned assets has virtually ground to a halt in 2006, with receipts amounting only to 0.1% of GDP, following a wave of privatization in 2004 and 2005 that earned the government gains representing respectively 3% and 5% of GDP. The moratorium, initially due to end in 2007, is not expected to be lifted before 2009.[26] In the meantime, the government must create the necessary legislative framework for a property market.

Government debt (Diagram B) is tightly linked to the evolution of the government budget balance and to growth. Since the beginning of the decade, thanks to the virtuous combination of fiscal rigor and strong growth, the public debt went from a record 60% of GDP built up between Ukraine's independence and 1999, down to 16.5% in 2006.[27] The IMF (2007b) predicts the debt to remain at around 15% of GDP at least until 2011.[28] With such low indebtedness, Ukraine ranks 17th among GCR countries. In comparison, the CIS average is 25%, whereas EU Accession 12 average stands at 33.5% and the EU 15 average at a very high 56%, which should by no means serve as an example for Ukraine.[29] Yet, in the light of the fiscal developments described above, debt could increase just as fast as it went down in previous years.

The most problematic factor remains inflation (Diagram C). Down from the four-digit levels of the early 1990s, inflation has nonetheless been exhibiting an erratic path over the past decade. In the past four years it has been hovering at around 10%, which remains very high compared to EU levels.[30] As Table 3.3.1 shows, inflation remains the Achilles' heel of Ukraine's macroeconomic situation. If it was kept under control, Ukraine would most likely rank in the top half of the ranking in terms of macroeconomic stability, ranking above, or in line with, EU countries, as shown in Table 3.3.2.

While the benefits of low inflation are obvious, the means to achieve it in Ukraine are less so, due to a multitude of factors: the de facto dollar peg, strong economic growth, the country's high vulnerability to fluctuating commodity prices on both the export (agriculture and metals) and the import (oil and gas) fronts, prolonged political instability that impacts the volume and composition of public spending, and growth in private credit. The consequences of such volatility are numerous and dire. Box 3.3.1 examines in further detail the issue of inflation and explores the various options for achieving greater price stability.

The interest rate spread (Diagram D) has been progressively narrowing following a peak reached in the aftermath of the 1998 crisis.[31] Interest rates in general

Box 3.3.1 Point of view: Perspectives on inflation

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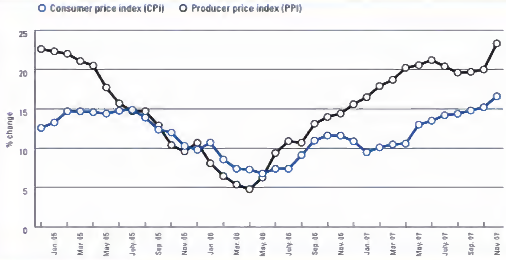
In 2007, according to preliminary estimates, real GDP in Ukraine grew by more than 7%, fuelled by expanding private consumption and booming investment (see Figure 1). Thus, the economic recovery of Ukraine initiated in 2000 and marked by an average annual GDP growth rate above 7% continues.

However, macroeconomic prospects of Ukraine for the medium run are challenged by increasing inflationary pressures. Since 2004, inflation, that is the increase in consumer price index (CPI), remains at double digit levels. It reached 12.3% in 2004, 10.3% in 2005, and 11.6% in 2006 (end of period). In December 2007, inflation accelerated to 16.6% (year on year), the highest in seven years. Consumer inflation was driven by a significant rise in prices for food products (23%) which account for some 60% of the consumer basket (see Table 1). Inflation in Ukraine exceeds that of neighboring countries, for example, 11.9% in Russia, 4.2% in Poland, 6.7% in Romania and 7.4% in Hungary.

Figure 1 Evolution in consumer price index and producer price index, January 2005-December 2007



Source: State Statistics Committee of Ukraine 2007

Table 1 Inflation

As of December 2007	Index value (year-on-year)	Contribution to CPI inflation (%)	Share in basket (%)
Consumer price index	116.6	16.6	100.0
Food	122.9	13.4	58.6
Non-food (incl. energy)	106.0	1.8	29.2
Services (incl.housing maintenance costs)	112.0	1.5	12.2

Source: State Statistics Committee of Ukraine 2007; authors' calculations

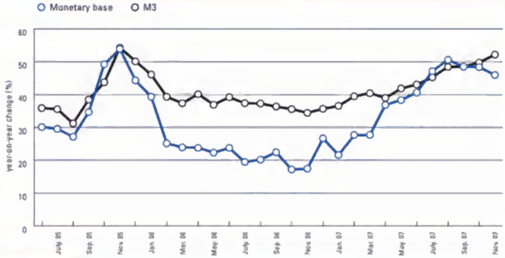
What are the main drivers of Ukraine's inflation? Two external factors play an important role. One is the rise in food prices in international markets, fuelled by growing demand, especially from Asian countries, and demand for agricultural products from producers of biofuel. The second factor is energy price shocks. In 2006 and 2007, imports of gas and oil became much more expensive for Ukraine. The gas price went up 2.2 times, and the oil price increased 1.5 times, thus contributing to cost-push inflation.

Yet two other major drivers are internal – expansionary fiscal policy and loose monetary policy.

Expansionary fiscal policy

In 2007, Ukraine continued its long-lasting electoral cycle that started in 2004 and brought about a significant fiscal expansion due to a substantial increase in social payouts, such as social transfers, minimum wages, and public sector salaries. The share of transfers in household disposable income almost reached the level of the

Figure 2 Evolution in monetary base and M3 aggregate, July 2005-December 2007



Source: National Bank of Ukraine

wage share. The share of social expenditures of the general government in GDP increased from 24% in 2004 to an average of 27.5% between 2005 and 2007. Fast consumption growth-driven by a strong increase in real disposable household income (20.1% in 2006 and 12.5% for the first 11 months of 2007) and an enormous expansion of consumer credit (134.2% and 97.8% respectively in 2006 and 2007) pushed up demand-pull inflation. Growth of real wages that exceeded productivity gains contributed to cost-push inflation.

Loose monetary policy

Under the fixed exchange regime and record high net capital inflow in 2005 to 2007, the National Bank of Ukraine (NBU) had to regularly intervene in the foreign exchange (forex) market to absorb excessive dollar supply (see Figure 2). Growth in M3, a broad measure of the money supply, was further induced by rather passive sterilization efforts of the central bank. In the second half of 2006 the NBU eased the monetary stance by reducing refinance rates and lowering reserve requirements at a time when inflation and growth were picking up. As a result, liquidity in the banking system has risen by 58% and was accompanied by a fall in inter-bank real interest rates, which were already negative. In 2007, the NBU maintained negative real interest and refinancing rates. For example, the average NBU weighted refinancing rate in 2007 was 10.1%, below the inflation rate of 12.8%. During the second and third quarters of 2007, the NBU reduced the use of deposit certificates to sterilize its forex interventions, with a view to preventing a liquidity crisis as the elections drew near. This led to a 50% surge in banking liquidity. As a result of such a monetary policy mix, money supply grew by 47% on average between 2005 and 2007 (54.2% in 2005, 34.5% in 2006, and 52.2% in 2007, M3 end of period), accommodating demand-pull inflation. Finally, the weakening of the dollar against other currencies on forex markets led to an import of inflation from abroad.

Inflationary prospects

Inflation will most likely stay in double digits in 2008 due to:

1. The lasting effects of expansionary fiscal and monetary policy in 2007.
2. Rising inflationary expectations based on generous social promises of the new government. Here, the major risk is associated with an intended compensation of "lost" Oschadbank's savings within the next two years, which would require incorporating in the state budget 2008 and 2009 an additional expenditure of some US$ 25 billion.
3. A further increase in price for imported natural gas by 40% in 2008.
4. A rise in communal utility tariffs.
5. Increased producer losses due to the government's attempts to regulate competitive food markets, such as an imposed ban on wheat exports.

Inflation is expected to decelerate to 4%-6% only after 2011 when energy prices will be adjusted to the regional market level, wage growth will be brought in line with productivity gains, and major structural reforms will be launched.

In the short term, success in fighting inflation will depend on the ability of the government to maintain fiscal sustainability and implement prudent social policy. This implies the adoption of a balanced budget (with no hidden deficit) in 2008-2009, the introduction of mid-term budget planning and performance based budgeting, implementation of tax reform and reduction of fiscal pressure. Also monetary policy should be tightened with NBU turning to more active operations to manage capital inflow and the level of liquidity in the economy.
In the medium term, charging the NBU with a clear mandate to maintain price stability looks inevitable. However, the switch from a fixed exchange monetary regime to inflation targeting should be preceded by the following measures:

1. Strengthening of political and operational independence of the NBU.
2. Progress towards forex market liberalization in terms of capital inflow regulation and gradual application of a more volatile nominal exchange rate.
3. Introducing a mechanism for better coordination of fiscal and monetary policies, in particular, by signing a memorandum of cooperation between the NBU and the Cabinet of Ministries.
4. Enhanced transparency of monetary policy, for example by developing a communication strategy for the central bank.
5. Developing efficient transmission instruments, including a deep and liquid state securities market.

The government should also implement unpopular structural reforms aimed at enhancing the economy's energy efficiency, increase competition in network industries (such as railways and public utilities), and establish a fully-fledged property market.

have been decreasing and Ukraine is closing the gap with neighboring EU countries, despite Ukraine's particular situation related to its export profile, strong growth, dollar peg and high inflation. This improvement is partly attributable to the sound monetary management by the National Bank of Ukraine and progress made in the financial sector. The latest figures show that the yield on long-term government bonds issued in the second quarter of 2007 oscillates between 6.2% and 7.2%, a low rate that even satisfies the EU's convergence criteria (see below).[32]

The gross national savings rate (Diagram E) is crucial as savings finance investments that enhance productivity and increase production capacity. A low national savings rate makes a country's investment dependent on foreign financing and/or imports, with potential adverse effects. In Ukraine, higher corporate taxes and social transfers have led to a substantial transfer of resources from firms that in general tend to display a higher propensity to save, to households that tend to display a higher propensity to spend.[33] As a result, the gross national savings rate has been declining substantially since its peak in 2004. At 23%, it is still at a healthy level, close to the EU 15 average and above the EU Accession 12 average. However, high levels of inflation constitute an incentive for households to spend even more – and to save less – as the value of savings tends to depreciate rapidly in an inflationary context. Should the high inflation rates persist over the coming years, it could further lower savings, thereby hurting investment.

When considering relevant benchmark values for the indicators, it is worth looking at the European Union's convergence criteria or Maastricht criteria. The criteria set ceiling values for deficit, debt, inflation, long-term interest rate and exchange rate fluctuation vis-à-vis the euro that a country must meet to be eligible to join the euro area.[34] Even though Ukraine has not even yet applied for the status of potential candidate country for EU membership, those criteria still serve as a useful benchmark for Ukraine, which shares many commonalities with several new EU members. As shown in Figure 3.3.2, Ukraine would satisfy three of the five criteria: debt, budget deficit and long-term interest rate. It would fail both the "inflation test" and, due to the dollar peg among other reasons, the exchange rate criterion.

3.4 Health and primary education

The health and primary education pillar is the last of the four pillars that make up the GCI's basic requirements subindex. Not only are health and education among the most basic services that government is expected to provide to its population, they are also key determinants of economic development because of their importance for the productivity of the labor force. At early stages of development, cheap labor in general constitutes the main comparative advantage of a nation, while for the most advanced economies human capital is an essential determinant of growth because of its capacity to innovate. Figure 3.4.1 shows the close relationship that exists between country performance on the health and primary education pillar and national economic wealth. Only three countries, Botswana, the Dominican Republic and Namibia, out of of 128, have GDP per capita exceeding US$ 10,000 and a score inferior to 5 in the 4th pillar.[35]

Ukraine achieves a mediocre 74th rank in the pillar, trailing all the EU members by a wide margin, as well as many other south eastern European countries such as Croatia (44th), Macedonia (47th), and Albania (65th). As Diagram A in Figure 3.4.2 shows, Ukraine does slightly better than its CIS peers, which is by no means a cause for celebration: CIS' median rank is 90, far below the median ranks of the EU Accession 12 (39) and of the EU 15 (16).[36]

The pillar comprises two components, health and primary education, each accounting for half of the pillar's score. Ukraine ranks respectively 82nd and 72nd in the health component and the primary education component (see Diagrams B and C). The problems afflicting Ukraine in these two areas are very similar. Although Ukraine has inherited relatively sound health and educational systems, they have become outmoded and are both in deep need of reform. Budgets are relatively large but often wasted due to overly-centralized decision-making and inefficiencies. The allocation of funds is far from optimal, with too much money spent on salaries – even though wages are very low – and not enough on equipment. Infrastructure is often decrepit and outdated. Corruption is pervasive and exacerbated by low salaries, both of which dampen motivation. All of these shortcomings contribute to poor outcomes in both areas.[37]

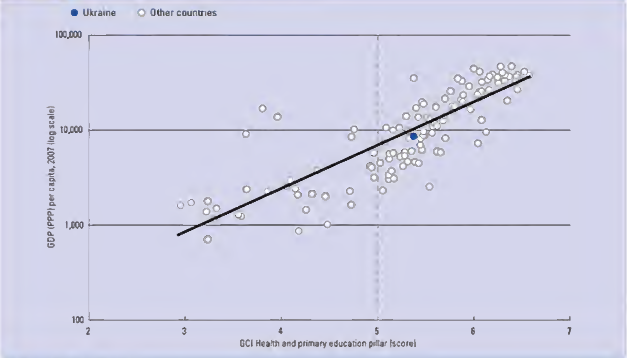
Health

While poverty indicators point in the right direction – namely downward – several health indicators, measuring another important aspect of well-being, betray the alarming sanitary situation of Ukraine, a situation at complete odds with EU standards. Ukraine ranks 82nd in the health component, trailing all EU members including Poland (39th), Hungary (42nd), Estonia (50th), Lithuania (51st) and Romania (71st), as well as several CIS countries. Only Russia (84th), Azerbaijan (100th) and Kazakhstan (104th) rank lower.

A huge chasm exists between Ukraine and EU averages on all four indicators (see Figure 3.4.3). Life expectancy at birth is just 67 years (Diagram A)[38], which is 7 and 12 years less than the EU Accession 12 and the EU 15 averages, respectively. Ukraine only does better than a few other CIS members, Bolivia, Guyana, a few Asian nations, and most sub-Saharan African countries. Even more alarming, Ukrainian men can only expect to live 62 years, down from 66 years in 1990 and compared to 65 years in 1970. The male population is decimated by diseases related to poor work conditions and alcohol. Infant mortality is 14 deaths per 1,000 live births, 2.5 times the EU average (5.6 cases). Epidemics also take their toll: 1.4% of Ukraine's adult population is infected with HIV, more than four times the EU average (0.3%). In addition, there were 100 registered cases of tuberculosis per 100,000 population in 2006, up from 41 cases in 1990 and almost four times the EU average.

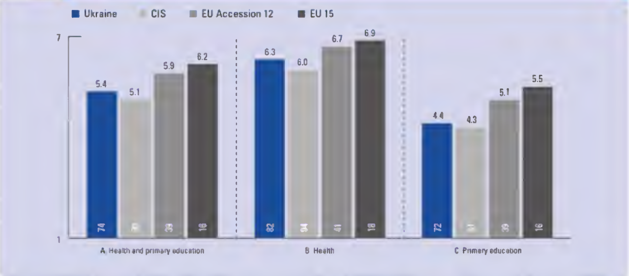
Turning to a cross-country comparison, the gap with Poland and Hungary, with which Ukraine shares a border and Estonia, with which Ukraine shares a common past, is wide. Even more worrisome, such a gap did not exist just 15 years ago (see Figure 3.4.4). In 1990, the four countries were at very similar levels in all four indicators. For example, life expectancy (Diagram B) in Ukraine was one year more than in Estonia. In 2005, it was five

Figure 3.4.1 GCI's health and primary education pillar and GDP per capita



Source: World Economic Forum; IMF 2007d

Figure 3.4.2 Ukraine and selected regions in the health and primary education pillar



years less. For tuberculosis (Diagram C), while the other countries managed to keep the incidence at reasonable levels (Estonia) or even halve it (Poland and Hungary), Ukraine has experienced a 250% increase in the number of cases over the same period.

The poor public health in Ukraine is, among other factors, the result of poorly-designed social policies. In principle, the constitution guarantees free healthcare.[39] Such a commitment, as socially commendable as it is, has proven blatantly unrealistic. It prevents the adoption of sustainable payment schemes involving some contribution from the patient. Instead, informal payments and corruption have become the rule, further favoring the rich. It also hampers the rationalization of the sector through the closure and consolidation of medical facilities.

In addition to a dismal sanitary situation, Ukraine is exhibiting major negative demographic trends. The birth rate (9 births per 1,000) and the fertility rate (1.2 children per woman) have fallen below the already distressingly low EU averages (10.2 and 1.37, respectively).[40] The replacement rate of 2.1 children per woman was last met in 1986.[41] The consequences are seen in Figure 3.4.5. Since a peak in 1993, Ukraine's population has been dwindling at an annual rate of 1% to return, in 2006, to its 1968 level (46.6 million).[42] For the sake of comparison, the figure also plots population figures in index terms for the period 1968 to 2006 for Ukraine, Europe and central Asia, and the world. Despite the short life expectancy, the ratio of the adult population to the elderly[43] fell to an all-time low in 2006 at 4.2 adults for one elderly. Again, this is less than the EU average (4.4) and almost half the CIS average. This proportion was 7 to 1 in 1960. Finally, immigration at its current pace will not be nearly enough to reverse these trends. According to the United Nations Population Division (2007b), the number of emigrants exceeded the number of immigrants by 700,000 over the period 2000 to 2005. This corresponds to an annual net migration rate of minus-3 per 1,000 people.[44]

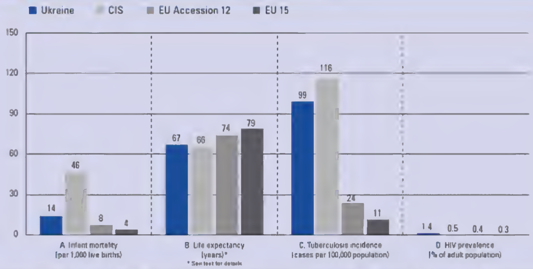
Ukraine's population is in poor health, aging and shrinking rapidly. The country is caught in a demographic vice of short life expectancy, high mortality, low fertility and insufficient immigration.[45] This does not bode well for the future and poses a serious threat to the country's development. Reversing or merely mitigating such trends will require a lot of time and concerted efforts. Healthcare and pension reforms, fiscal policy, immigration laws, as well as family planning, must be designed and formulated with a consideration for the incentives they create and their capacity to address these issues. That a country like Ukraine is plagued with such demographic challenges so early in its development is a source of grave concern. It is true that the very same challenges face the great majority of industrialized countries. However, they are much better equipped to address them.

Primary education

Education is one of the surest ways to raise a population out of poverty and improve a country's productivity, and hence its competitiveness. Ukraine, like other former USSR republics, inherited a relatively sound education system from the Soviet era. Witness Ukraine's near perfect score of 99.4% in terms of the adult literacy rate, while the four other CIS countries for which data is available average 99.3%.[46] In the wake of independence, primary and secondary enrolment rates were very high – so high that 2005 rates remain below those of 1990.

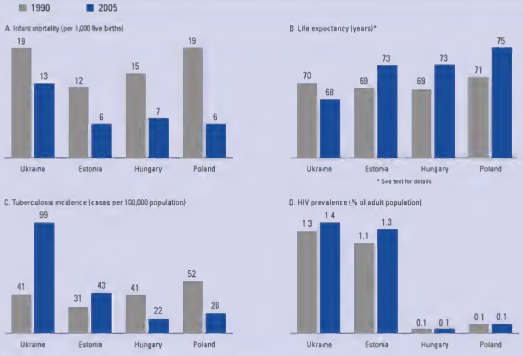
Yet Ukraine ranks a low 72nd in the primary education component with a score of 4.4 (see Diagram C in Figure 3.4.2). The country compares favorably with several CIS members trailing only Uzbekistan, Russia and Kazakhstan. It also precedes the Latin American average (score of 4.2), including Chile and Brazil, but places far behind all EU members.

Figure 3.4.3 Selected indicators for Ukraine and selected regions, latest year available



Source: WHO 2006a, WHO 2006b; WHO 2007; UNAIDS 2007, national sources; authors' calculations

Figure 3.4.4 Selected indicators for Ukraine and selected countries, 1990 and 2005



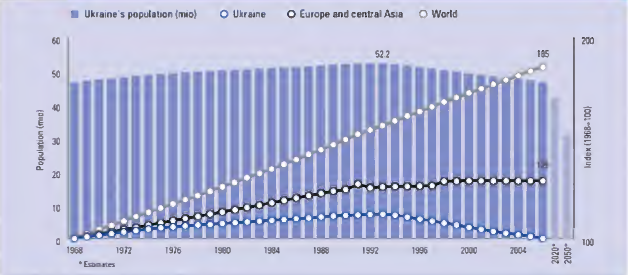
Source: WHO 2006a; WHO 2006b; WHO 2007; UNFPA 2006; UNDP 2006b; UNAIDS 2006; World Bank 2007c; national sources

Ukraine gets strongly penalized for its low primary enrolment rate which amounts to only 83%, lower than the EU 15 (97%), EU Accession 12 (93%) and CIS (88%) averages, and inferior to all comparator countries.[47] The second variable included in this component is the quality of primary education[48], in which Ukraine ranks 49th with a score of 4.1, ahead of all the big Latin American countries and a few EU 15 members, but lagging behind all EU Accession 12 members and all CIS countries but two - Azerbaijan and Tajikistan.

This is in line with the results of the Education For All Development Index (EDI), part of UNESCO's Education for All initiative, whose results for selected countries are reported in Table 3.4.1.

In addition to the primary enrolment rate, the EDI captures three concepts: adult literacy, education quality and gender disparities.[49] In the EDI, Ukraine ranks 46th out of 125 countries (4th best decile).[50] It is a better performance than its 72nd place (6th best decile) in the primary education component of the GCI. This is mainly due to the good results Ukraine achieves on adult literacy and in terms of gender equality. However, Ukraine is among the under-performers within the group of comparator, eastern European and CIS countries. Only Azerbaijan does worse at 52nd.

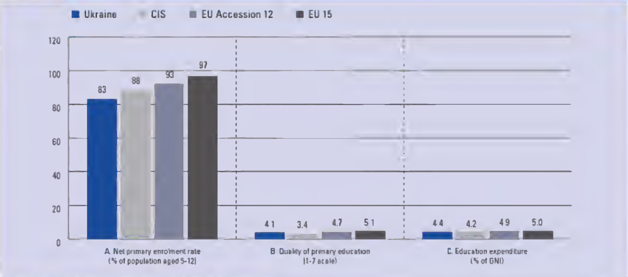
Figure 3.4.5 Demographic evolution for Ukraine and selected regions



* Estimates

Source: World Bank 2007a; United Nations Population Division 2007a

Figure 3.4.6 Selected education indicators, latest year available



Souces: UNESCO Institute for Statistics; World Economic Forum; World Bank 2007a

The third and last indicator of this component is education expenditure expressed as a percentage of gross national income (GNI). Ukraine ranks 52nd in this dimension with spending amounting to 4.4% of GNI or 20% of the government budget (see Figure 3.4.6). By comparison, OECD averages stand at 4.6% and 19%, respectively.[51] However, this sizeable budget gets wasted by the many inefficiencies of the system. The chief problem is the centralized mechanism of fund allocation that follows a "per need" approach, which merely maintains the status quo. A sounder approach would be to allocate the funds on a "per student" basis, entrusting local administrations with the task of spending where needed. A big chunk of the budget serves to pay the wages of too many teachers, rather than to update infrastructure and equipment. At the same time, salaries in education remain very low. The average monthly nominal wage was UAH 806, 22% lower than the national average salary (UAH 1,041), which does not help to attract the most talented people to the profession.[52] This also undermines morale, motivation and quality, and favors misconduct. Indeed, it is broadly recognized that corruption in education, for example buying exam results and diplomas, is pervasive, just as it is in the healthcare sector.

3.5 Higher education and training

Higher education and training is a crucial determinant of competitiveness. While primary education's role is to provide pupils with literacy and numeric skills, higher education's purpose is to further prepare students for more complex workforce opportunities, or supply them with the general knowledge and analytical skills that will allow them to be trained for a specific job. Given the crucial role of higher education for competitiveness,

Table 3.4.1 UNESCO's Education for All Index 2006

Country	EDI rank (out of 125)
United Kingdom	1
Slovenia	2
Finland	3
Kazakhstan	4
Latvia	11
Czech Republic	13
Poland	14
Estonia	16
Slovak Republic	20
Hungary	21
Armenia	29
Lithuania	30
Kyrgyz Republic	31
Croatia	32
Tajikistan	33
Chile	35
Bulgaria	37
Romania	38
China	43
Ukraine	**46**
Mexico	48
Argentina	50
Azerbaijan	52
Malaysia	62
Brazil	72
Turkey	77
India	100

Source: UNESCO 2006

countries such as Ukraine that were previously following the Soviet model must focus on reforming higher education institutions to make them more responsive to the needs of a market economy.

The collapse of the USSR had an impact on every aspect of life of the Ukrainian people, not least education. Parts of the previous curriculum suddenly became obsolete under the new system. A market economy is very different from the communist model and requires specific skills that were insufficiently developed among the population of Soviet Ukraine, in particular from the point of view of the business sector.

The importance of higher education in determining the level of economic prosperity is reflected in the remarkably tight relationship that exists between performance in the 5th pillar and economic wealth as measured by GDP per capita valued at purchasing power parity (see Figure 3.5.1). The correlation between the two sets of data is as high as 0.87.[11]

Ukraine ranks 53rd in the higher education and training pillar of the GCI, fairly stable over the past year, although it fell two years ago (54th in 2006 to 2007, 44th in 2005 to 2006). In terms of ranking, the same patterns emerge as for primary education. That is, among CIS countries, Ukraine stands out along with Russia, which is only a few notches ahead (45th). Tajikistan (106th), Armenia (95th) and Azerbaijan (89th) bring the CIS average down and explain a the poor median rank of 83.5 (see Diagram A in Figure 3.5.2). Ukraine also precedes the three other BRICs (Brazil, India and China), as well as Turkey (60th) and Mexico (72nd). However, Ukraine is a laggard when measured against EU countries. The country trails all EU members with the exception of Romania (54th) and Bulgaria (66th). The median rank for the EU Accession 12 is 34, and 18 for EU 15 members, in great part due to the exceptional performance of three Nordic countries, Finland (1st), Sweden (2nd) and Denmark (3rd).

The very same problems outlined in section 3.4 that affect primary education outcomes are pervasive in higher education. Ukraine achieves stellar results in terms of secondary and tertiary education enrolment rates. However, such quantitative measures in themselves do not tell the whole story, as they disguise important differences in the quality of education, the obsolescence of large parts of the system and its inadequacy, and in particular the disconnect with the needs of a competitive business sector. For this reason, in the 5th pillar of the GCI enrolment rates are complemented by measures of quality, which turn out to be the weak element of Ukraine's educational system.

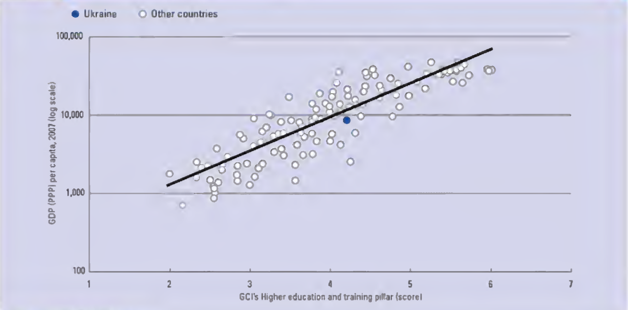
Quantity of education

Diagram B in Figure 3.5.2 reveals that Ukraine ranks a high 31st for the quantity of higher education, thanks to high scores in all three indicators of this component. It ranks 54th for the secondary enrolment rate, 17th for the tertiary enrolment rate, and, as discussed in the previous section, 52nd in terms of education expenditure. Such results put Ukraine almost on a par with EU countries, and at a sizeable distance from other CIS countries, despite the latter's fairly good performance in this dimension compared to other areas of the Index, as reflected in the median rank of 57.

Although remarkable, Ukraine's performance looks somewhat less impressive when doing time and cross-country comparisons (Figure 3.5.3). Once higher than EU averages, education expenditure (Diagram A) has shrunk between 1990 and 2005 in Ukraine and CIS, while improving everywhere else. The same pattern emerges for secondary enrolment (Diagram B). From 93% in the wake of independence, Ukraine's rate has declined to below 90% and now trails EU average rates by 10 percentage points or more. Finally, tertiary enrolment (Diagram C) has increased by 50% in Ukraine and barely improved in CIS, but has doubled in the EU 15 and nearly tripled on average in EU Accession 12 countries. Baltic countries, whose average rate used to be half Ukraine's, have now surpassed the EU 15 average.

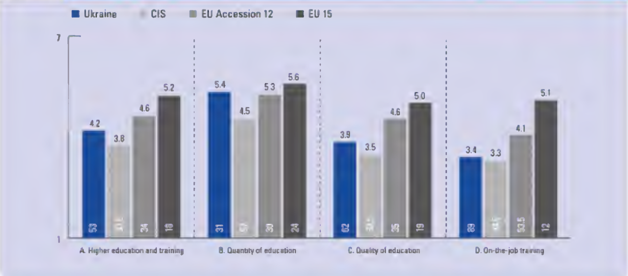
The performance of certain countries is simply outstanding. Hungary has gone from 14% to 65%, Romania from 10% to 45%, and Poland from 22% to 63%. It is the same scenario as in the healthcare sector: even though it was once a front runner, Ukraine has been overtaken

Figure 3.5.1 Higher education and training pillar versus GDP per capita



Source: World Economic Forum; IMF 2007d

Figure 3.5.2 Results for Ukraine and selected regions in the higher education and training pillar and its components



by almost every country in the region. This raises questions as to what has, and what has not, been done to reform education in Ukraine. Despite these considerations, Ukraine's performance can be qualified as satisfactory in terms of quantity, but the same cannot be said about the quality of education.

Quality of education

As Easterly (2002) explains, an artificial focus on administrative targets, such as enrolment rates, has often obscured the importance of the quality of learning, and the role of incentives and motivation of teachers, students and parents. As described in Section 3.4, education expenditures in Ukraine are often inefficient because too much emphasis is put on quantitative measures at the expense of quality (see Diagram C in Figure 3.5.2). Today, the quality of the educational system is deemed to be below the necessary standards by the business community, a group well positioned to appreciate its adequacy for the needs of the economy. At 62nd, Ukraine appears in the first half of the ranking, notably ahead of Bulgaria (64th), Greece (68th), Kazakhstan (70th), Azerbaijan (94th), as well as Argentina (76th), Mexico (83rd), and Brazil (95th). However, it is not yet on a par with its EU neighbors. With the exception of Bulgaria, it trails all other EU Accession 12 countries, led by Estonia, which earns an impressive 21st rank.

The component is made up of three variables. On the Executive Opinion Survey question about the capacity of the educational system to meet the needs of a competitive economy, Ukraine receives a score of 4.0, which corresponds to the 47th position. Ukraine fares

Figure 3.5.3 Time and cross country comparison for quantity of education, 1991 and 2005

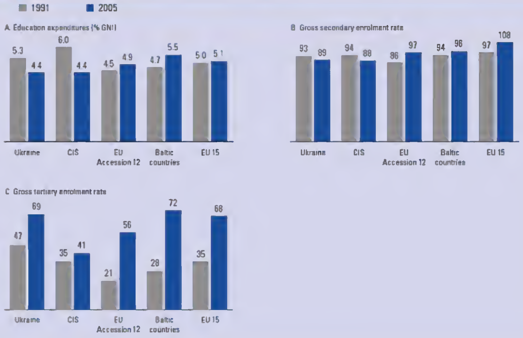
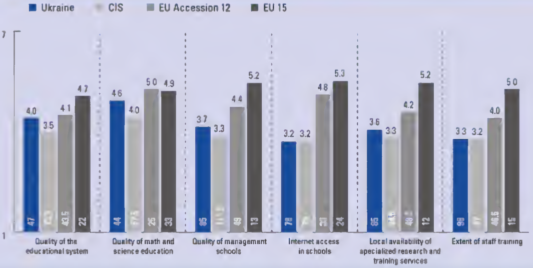


Figure 3.5.4 Performance of Ukraine and comparator regions on selected qualitative indicators



even better with respect to the quality of science and mathematics education. It is almost on a par with the EU 15 average, which scores lower than EU Accession 12 average (5.0).

The picture is tarnished by the poor quality of management schools. Ukraine ranks 85th on this variable. As explained in Section 3.11, good management is a key ingredient of a firms' productivity and Ukrainian schools need to train managers with the necessary set of skills. To succeed in today's globalized economy a firm requires managers with outstanding business and leadership skills, excellent knowledge of the functioning of markets, and an equally good understanding of economics. Currently in Ukraine no management training institutions meet international standards. Temptation is great for outstanding students to go abroad to seek better education with the risk that they will not come back. Figure 3.5.4 shows that the gap is wide in this indicator between Ukraine and EU 15.

Another important indicator on which Ukraine performs poorly is Internet access in schools.[14] Not only is the Internet an extraordinary means to communicate and diffuse knowledge, but the pervasiveness of access also reveals the level of equipment in schools. Setting up Internet access obviously requires one or more personal computers, as well as a reliable dedicated phone line with high bandwidth to accept multiple connections. It is also unlikely to be given priority over more fundamental equipment needs, such as furniture, central heating or sports facilities. As a result, Internet access is a good proxy for the quality of school infrastructure. In this dimension, Ukraine, ranks 78th and lags behind the EU 15 by a significant margin. The gap is almost equally wide with the EU Accession 12 members.

On-the-job training

Training and retraining is vital in today's quickly evolving world. Like never before, production capabilities, both physical and human, must adapt rapidly to the versatile needs of demanding consumers. For example, new machinery requires trained personnel. The need for adaptability is magnified in countries in transition, where the domestic economy itself usually grows rapidly.[37] Moreover, firms in developing countries increasingly face trade barriers created by quality standards, such as EU directives and ISO standards. To overcome such barriers, products and processes need to be upgraded and improved. For these reasons, lifelong learning and on-the-job training are key determinants of companies' success.

Ukraine ranks a low 89th with respect to on-the-job training, the lowest result among all comparator countries. However, the data reveals a positive trend over the past two years. The availability of research and training institutions, ranked 85th, appears to be less of a problem than the willingness of companies to support and undertake on-the-job training for their staff, as shown in the low ranking of 98 on this indicator. Apparently, business leaders responding to the Executive Opinion Survey believe that companies in Ukraine do not favor investment in the country's available human capital. As Ukraine develops and moves up the value chain, on-the-job training will become increasingly important for national competitiveness and productivity.

3.6 Goods market efficiency

Given their history, many former transition economies demonstrate poor performance on this pillar, which is at the core of a market economy and part of the efficiency enhancers subindex of the GCI. To a large extent, goods market efficiency depends on competition, a concept essentially unknown in socialist countries. Therefore, the dimensions assessed in this pillar were central to transition efforts and turned out to be one of the most difficult areas to tackle. The entire institutional framework to regulate markets needed to be put in place and firms and employees had to learn how to cope with competition in markets they previously dominated. As most of the enterprises were inefficient by market economy standards, large restructuring efforts took place and managers and employees had to learn how to navigate within the new, still imperfect framework. Arguably, the spreading of a proper understanding of the functioning of a market economy, including the cultural factors and the changes in mindset it entails, is taking the longest. Consequently, most transition economies show weaknesses in this area and Ukraine is no exception, ranking 101st out of 131 countries, far behind Russia (84th), Poland (69th) and Kazakhstan (63rd), as shown in Table 3.6.1.

Over the past three years, Ukraine's progress on this pillar has remained behind global trends. Although improvements have been clearly noticed by the business community in their responses to the Executive Opinion Survey, as indicated by the rising score on the overall pillar, the rise was not sufficient to lead to an improvement in the ranking in both years. After a slight improvement in the ranking (from 88th to 85th) between 2005 and 2006, Ukraine's position on this pillar fell to a low 101st in the 2007–2008 edition of the GCR, which is only partly attributed to new countries entering the ranking. Over the same time period the score kept improving, more in the first year and only slightly in the second year. A closer look at the detailed results obtained on this pillar, shown in Table 3.6.2, reveals the reasons behind this development.

Goods markets efficiency and productivity basically hinges on the level and the quality of competition in a country as well as on the quality of prevailing demand conditions. The Ukrainian economy faces challenges in both areas, although demand conditions are to a lesser degree a problem. On the competition subpillar, however, it places 112th out of 131 countries, one of the weakest performances worldwide. In addition, although the level and quality of competition has slightly improved with respect to the country's overall history, Ukraine fell from 104th position in the 2006–2007 edition of the report. The reasons for this poor performance stem from deficiencies with respect to domestic as well as foreign competition.

Foreign competition

Despite World Trade Organization membership in 2008, the country still appears to be fairly protected. In their responses to the Executive Opinion Survey business leaders consistently assess the level of tariff and non-tariff barriers as very high, ranking the country 123rd on this indicator. On this variable, Ukraine is under-performed on a global level only by significantly less developed countries. This result contrasts with the fairly low overall trade-weighted tariff rate of 3.9%, which disguises a significantly higher tariff rate for agricultural products (28.3%).[38] One reason for a difference between the assessment of the business community and the statistical data could be the high prevalence of non-tariff barriers, mainly in the form of quality and technical standard requirements that are not harmonized with international standards.

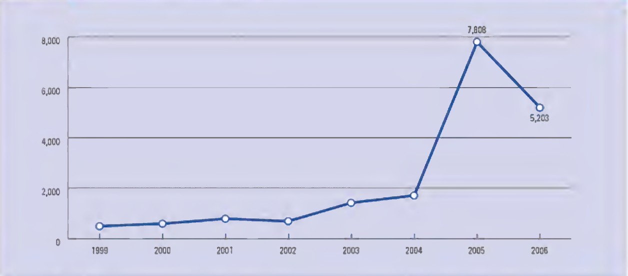
Table 3.6.1 Ukraine's performance in the goods market efficiency pillar in international comparison

	6th pillar: Goods market efficiency		A. Competition		B. Quality of demand conditions	
Country/Economy	**Rank**	**Score**	**Rank**	**Score**	**Rank**	**Score**
Hong Kong SAR	1	5.8	2	5.8	5	5.7
Singapore	2	5.8	1	5.9	15	5.4
Denmark	3	5.4	5	5.4	7	5.6
Ireland	4	5.4	3	5.4	17	5.4
Austria	5	5.4	12	5.2	4	5.8
Switzerland	6	5.4	15	5.2	2	5.8
Sweden	7	5.4	11	5.2	6	5.7
Netherlands	8	5.4	6	5.3	14	5.4
New Zealand	9	5.4	4	5.4	21	5.3
Finland	10	5.4	9	5.3	9	5.6
United States	12	5.3	10	5.2	12	5.5
Malaysia	20	5.2	13	5.2	25	5.3
Estonia	27	4.9	18	5.1	36	4.7
Chile	28	4.9	21	5.0	31	4.8
India	36	4.7	44	4.5	29	4.9
Turkey	43	4.5	43	4.6	48	4.5
Lithuania	44	4.5	48	4.5	41	4.6
China	58	4.3	61	4.2	55	4.4
Hungary	59	4.3	46	4.5	87	3.8
Mexico	61	4.2	64	4.2	52	4.4
Kazakhstan	63	4.2	71	4.1	50	4.4
Poland	69	4.1	59	4.2	81	3.9
Croatia	71	4.1	69	4.1	72	4.1
Romania	74	4.0	67	4.1	85	3.9
Russian Federation	84	3.9	104	3.8	62	4.3
Azerbaijan	95	3.8	110	3.7	74	4.1
Brazil	97	3.8	115	3.6	63	4.3
Ukraine	**101**	**3.7**	**112**	**3.6**	**78**	**4.0**
Argentina	115	3.5	125	3.3	82	3.9

Table 3.6.2 Ukraine's performance in the goods market efficiency pillar in detail

	2007-2008 (out of 131)		2006-2007 (out of 122)		2005-2006 (out of 114)	
Indicator	**Rank**	**Score**	**Rank**	**Score**	**Rank**	**Score**
6th pillar: Goods market efficiency	**101**	**3.7**	**85**	**3.8**	**88**	**3.6**
A. Competition	**112**	**3.6**	**104**	**3.6**	**104**	**3.3**
1. Domestic competition	110	3.6	102	3.5	97	3.4
Intensity of local competition	93	4.4	78	4.5	77	4.4
Extent of market dominance	95	3.2	79	3.3	76	3.1
Effectiveness of anti-monopoly policy	98	3.2	84	3.3	79	3.3
Extent and effect of taxation	123	2.4	108	2.4	110	2.1
Total tax rate	101	60.3	90	60.5	n.a.	n.a.
Number of procedures to start a business	65	10.0	104	15.0	93	15.0
Time required to start a business	65	33.0	49	34.0	46	34.0
Agricultural policy costs	129	2.7	116	2.8	112	2.6
2. Foreign competition	109	3.6	100	3.8	107	3.1
Prevalence of trade barriers	123	3.6	99	3.8	89	3.8
Trade-weighted tariff rate	41	3.9	41	3.9	n.a.	n.a.
Prevalence of foreign ownership	124	3.8	119	3.6	113	3.5
Business impact of rules on FDI	123	3.7	118	3.6	113	3.4
Burden of customs procedures	118	2.7	n/a	n/a	90	2.4
Imports as a percentage of GDP	49	52.6	50	48.7	36	57.6
B. Quality of demand conditions	**78**	**4.0**	**71**	**4.1**	**62**	**4.2**
Degree of customer orientation	74	4.5	66	4.5	44	4.8
Buyer sophistication	82	3.5	71	3.7	73	3.6

Figure 3.6.1 Inflows of FDI into Ukraine in mio US$, 1999-2006



Source: UNCTAD 2007

A second reason for this dismal assessment could be that importing goods into the country is costly and time consuming, which affects business perceptions. The variable "Burden of customs procedures" captures one aspect of this dimension. Here, Ukrainian businesses give a very low score of 2.65 on a scale from 1 to 7 resulting in a very low 118th rank. This data is supported by other sources. According to the World Bank's Doing Business Report (2007b), it takes 39 days to import goods and importing one container of goods costs US$ 1,065. Ukraine ranks 120th out of 178 economies on this indicator and compares very unfavorably to the world's best. In Singapore, one of the top performers in this category, importing a container costs less than one-third and takes three days. These data clearly call for a streamlining of import procedures and a reform of the institutions involved, in particular, as the prevalence of trade barriers has been consistently highlighted as an important problem over the past few years.

Trade barriers are not the only indication of a closed economy. Businesses also express their concern that foreign ownership in the country is limited. Ukraine ranks 124th on the related indicator in the GCR. Also here, Ukraine's performance over the past few years has improved, but remained behind worldwide developments, as shown by the increasing score accompanied by a drop in the ranking. In particular since the Orange Revolution, annual inflows of inward investment have increased considerably (see Figure 3.6.1), yet the overall stock of FDI per capita remains very low in comparison to other countries. Foreign investment will be beneficial for the country in many ways. It is not only necessary for continuing privatization, but also for an upgrading of existing capital stock, transfer of know-how and technology, as well as managerial expertise.

On a related indicator that assesses the impact of FDI rules on business, Ukraine achieves an equally low rating of 123rd. Because the legal requirements for domestic and foreign investors are very similar, the reasons for this poor assessment lie in the overall business environment and some discriminatory measures. Limitations on foreign ownership are practically non-existent, except for land ownership and a few sectors, such as publishing, broadcasting and defense. The difficulties foreign investors face primarily stem from the application of regulations. These are often not governed by one law, which makes navigating difficult, and arbitrarily enforced with many administrative hurdles and long delays. In addition, the administration discriminates against foreign investors, in particular, when they seek redress in response to adverse regulations.[57]

Domestic competition policies

The second category assesses the level of domestic competition, which is crucial for maintaining efficient markets for goods and services. Entry of new businesses as well as anti-trust institutions that efficiently prevent unhealthy market dominance are key components of a competitive environment. In addition, public policy should be designed to minimize the burden on business and in particular, it should not create distortions. In this regard, agricultural policy and taxation are the two most important examples considered. As can be seen in Table 3.6.2, Ukraine ranks a low 110th on the overall category of domestic competition. The ranking has continuously fallen over the past few years, whereas the score has increased, again pointing to improvements with respect to its own history, but which lag behind global trends. The decreasing ranking reflects to a certain extent new countries included in the index, but also a very positive global trend.

Ukraine ranks 93rd on the indicator measuring the extent of local competition, which captures the level of domestic competition as perceived by business. In general, individual industries will differ in the extent of competition they face and this variable captures the overall level of competition across all sectors of the economy. Ukraine ranks behind Poland (70th) and right behind Russia (92nd) on this indicator, and significantly behind other large emerging markets such as China (39th), Brazil (45th) and India (10th). It comes in ahead of significantly smaller countries that in general display lower levels of competition because of their size, such as Oman, Macedonia, and Bosnia and Herzegovina.

Local competition depends to a large degree on the structure of the enterprise sector. Entry and exit of enterprises is a key feature of any market economy as it ensures competition and therefore efficiency. In Ukraine, competition is governed by the Law on the Protection of Competition adopted in 2001, replacing an earlier variant of competition law. This law brought Ukraine closer to international standards in the area of competition law, as provisions for merger control, state aid and collusion were added. The Anti-Monopoly Committee of Ukraine (AMCU) is the primary institution responsible for monitoring and ensuring the implementation of this law, as well as for preventive measures and promoting competition.

The AMCU has substantial power and can give instructions to other government bodies, but the government can authorize exceptions from its rulings. This procedure has been frequently used to protect priority industries at the local or national level, often consisting of a large number of state enterprises that have not yet been restructured. This is enabled by the fact that competition law does not consider many forms of state aid, such as tax arrears or exemptions as anti-competitive behavior. Nor does the law consider special advantages such as Free Economic Zones as anti-competitive behavior.[58] In addition, weaknesses in the judicial system also impede efficient implementation of the competition law. These weaknesses include the overall independence of the judicial system (see Section 3.1), and the length of procedures, as well as the low capacity of judges to implement competition law because of their limited knowledge and experience in this area.[59]

In their response to the Executive Opinion Survey, Ukrainian business leaders place the country at 98th in terms of effectiveness of anti-monopoly policy. Other central European countries have been far more successful in this respect: Poland ranks 56th, Estonia 32nd and Romania 70th. Most CIS countries, however, struggle to set up efficient anti-monopoly policies, Russia places 106th, Kazakhstan 81st and Azerbaijan 114th. EBRD's transition indicators confirm that little progress has been achieved in terms of competition policy since the wake of transition. On a range of 1 (socialist economy) to 4+ (market economy levels), Ukraine only achieves a score of 2.3.[60]

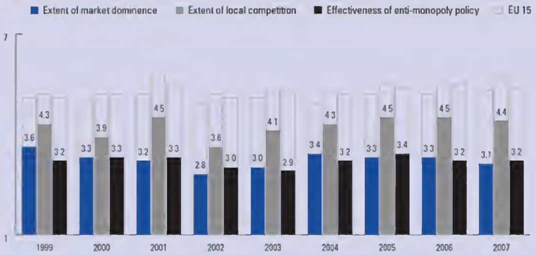
The restructuring of large enterprises has been fraught with difficulties that have resulted in considerable delays. According to the EBRD's transition indicators, the structure of enterprises resembles more that found in socialist economies than in market economies.[61] Many industries remain highly protected as priority sectors under local or national industrial policies, which in turn have priority over competition policies. As a result, the Ukrainian economy, in particular the industrial sector, is still dominated by large post-Soviet conglomerates and many key sectors remain highly concentrated. Protection of these sectors results in impediments to exiting and to restructuring that remain significant in specific sectors. This has also slowed down the development of new activities. Interestingly, many services sectors and network industries that are highly regulated in EU countries are fairly liberalized in Ukraine.

A look at the historical data reported in Figure 3.6.2 indicates that the numerous efforts to improve the environment for competition did not lead to a substantial change between 1998 and 2007. However, following the implementation of the competition law in 2002, business perceptions related to the three indicators measuring the efficiency of competition policy have remained on average more stable at a higher level. The GCI assesses a very important aspect of competition law: perceived competition. Businesses need to feel the pressure of competition if they are to undertake efforts to remain ahead of the curve, which in turn leads to efficiency and productivity gains. The low ranking Ukraine obtains on this indicator, and the fact that the score has not significantly changed over the past few years despite serious efforts, could be interpreted as a confirmation of the difficulties related to implementing competition-related laws and regulations. However, businesses do not trust the institutions established to regulate competition, a perception that has not changed over time, as shown in the consistently low score obtained on the indicator related to the effectiveness of anti-monopoly policies.

On a related indicator, the extent of market dominance, businesses express a similarly dismal assessment and rank Ukraine at 95th out of 131 countries, down from 78th in the previous year and 77th in 2005. The low score obtained (3.2 on a scale from 1 to 7) further indicates that market dominance is a serious problem. Here, Ukraine ranks far behind the CIS average and that of other transition economies such as Poland and Romania. Data from the Anti-Monopoly Committee confirms this result as it estimates that almost 45% of all sales in 2004 were generated in sectors that had monopolistic or oligopolistic structures or sectors with dominant players. Often, the less competitive markets are to be found in sectors in heavy industry and infrastructure such as mining, coke production, telecommunications, brewing, tobacco and some sectors of chemicals and machine building, where the high level of capital intensity creates a barrier to entry.[62]

The lack of focus on competition-enhancing measures has resulted in a fairly weak SME sector, particularly in industrial sectors. This is noteworthy because small businesses,

Figure 3.6.2 Competition indicators in Ukraine, 1999-2007



Note: Survey results in this figure are different from those entering the index GCI. See Chapter 1 for details about the calculation of the GCI results.

Source: World Economic Forum, Executive Opinion Survey

which in other countries have significantly contributed to productivity and efficiency gains, are developing less vigorously in Ukraine than in other transition economies, or even in Russia. Although data on small business activity is difficult to obtain in Ukraine, estimates by the OECD suggest that small businesses (up to 50 employees) may have accounted for just 25.5% of employment in 2005.[63]

As mentioned previously, competition necessitates rules for entry and exit from markets. Exit rules are not enforced in Ukraine because many large enterprises still do not face hard budget constraints and the bankruptcy law is not implemented effectively. At the same time, many barriers to entering markets exist, although much progress has been achieved over the past years. According to World Bank data that also informs the GCI, the number of procedures to start a business has been reduced between 2006 and 2007 from 15 to 10 and the country ranked 65th on this indicator in the GCI sample in 2007. Ukraine is at the same level as Poland and behind most CIS countries on this indicator.[64] This result reflects efforts undertaken since 2005 to simplify the business environment for Ukrainian start-ups.

Progress on this front has been mixed. Although the number of procedures has been reduced, the one-stop-shops that were created to facilitate business registration are not working effectively. The reasons are that implementation has been erratic and that policymakers underestimated the complexity of the regulatory and legislative changes required for the one-stop-shops to function properly.[65] It is therefore no surprise that despite these efforts, the number of days required to register a business in Ukraine has not changed significantly. Ukrainian entrepreneurs still need 33 days to register their enterprise, down by one day from 2006. In addition, Ukraine did not keep up with international developments, as the rank has considerably fallen between 2006 and 2007, from 49th to 65th in the GCI sample.

Tax system

A distortionary tax system or an overly high tax burden can significantly limit competition in a country, as it limits the incentives to invest and develop an enterprise. Many observers agree that the fiscal system is not conducive to growth in Ukraine because of the excessive taxation burden. The total tax rate of 60.3% is among the highest in the world, placing Ukraine at a low 101st rank in the overall sample. Countries such as Poland and Russia rank above Ukraine in this respect and only a few countries at the same level of development are to be found lower, such as Argentina at 121st and Colombia at 117th. In addition, business leaders view the system as particularly burdensome and distortive, as it reduces the incentives to work and invest. In their responses to the survey question which assesses this aspect, they place Ukraine 123rd. With a score of 2.4, this indicator is one of the worst assessments in the entire sample and no change has been observed since the 2006-2007 edition of the GCR.

Although the Ukrainian tax system has been significantly simplified over the past few years with the introduction of flat personal income tax rates and a simplification and reduction of the corporate profit tax, there remains considerable room for further improvement. In 2006, tax rates for corporate profits were at 25%, while the personal income flat tax rate was at 15%. These figures stand in contrast to the overall tax rate reported in the GCR and point to a number of significantly higher other taxes that are still in place. One problem is the tax administration, which does not have the capacity to efficiently implement the tax system. The Doing Business Report of the World Bank (2007b) estimates that it takes a typical company 2,085 hours to prepare and file income tax returns, the equivalent of about 260 working days, the time of one employee's working year. This time is by far the highest in the CIS countries. In Russia, where it takes the second longest, the estimate is 448 hours.

These data show that the entire taxation system needs a thorough overhaul to make it more conducive to business activity and growth. Measures that have been introduced to facilitate tax payments for business did not meet expectations. The simplified tax system, which was intended to facilitate the creation of small enterprises, leaves significant room for abuse and is in itself fairly complicated.[66] However, a reform of the tax system will necessitate a reform of the expenditure side of the government budget, including a reduction of the fairly high expenditures. These high expenditures primarily result from social policies and state support for state-owned enterprises, which in a number of sectors still do not face hard budget constraints (see Section 3.3).

Regulation of the agricultural sector

Because of their importance for employment in rural areas, agricultural policies are a significant source of market distortions in many countries. In Ukraine, the agricultural sector has always been very important, accounting for 22.8% of the labor force in 2003. Agricultural policy is assessed as very costly and excessively burdensome for the country, ranking at 129th in the overall sample with just Venezuela and Zimbabwe receiving a lower rating. The trend has been negative over the past few years with the ranking deteriorating considerably from 112th in 2005. On this indicator, Ukraine underperforms other central European countries such as Poland (109th) or Romania (114th), and also lags behind all other CIS countries, such as Kazakhstan (85th).

The low score reflects serious inefficiencies in Ukraine's agricultural policy. Agricultural subsidies amount to US$ 1.1 billion in direct support and US$ 0.65 billion in tax exemptions.[67] This assistance is not always designed to promote structural change in the agricultural sector. Too many different programmes make it difficult to administer and tax exemptions have a limited effect on farmer income, as intermediaries absorb a significant share.

Demand conditions

In general, demand conditions tend to differ from country to country. Demand conditions highly depend on competition in goods markets and the customers' purchasing power. However, in some countries there is a strong preference for quality when making purchasing decisions, which contributes to the development of a high-quality sector and increases competitiveness. An example is France, where consumers tend to have a higher demand for high quality food products than in Germany, for example. Demand conditions are assessed in the GCI through the degree of consumer orientation and buyer sophistication.

Historically, in central European and CIS economies in the absence of competition, firms did not depend on their consumer orientation to thrive. In the absence of choice, product quality was a minor component in the purchasing decision. It is no surprise that demand conditions remain rather weak in Ukraine, ranking at 78th out of the entire sample.

Businesses are not sufficiently geared towards their customer's needs and buyers often decide solely on price, with quality and other performance attributes of the product or service playing a less important role than in more developed economies. Switzerland tops the ranking for this aspect, whereas central European countries are ranked significantly lower at 75th for Poland and 71st for Romania. Russia comes in at 58th in this category. It is likely that with increasing competition and purchasing power and further liberalization of markets in the course of accession to the World Trade Organisation, demand conditions in Ukraine will improve significantly.

3.7 Labor market efficiency

The labor market efficiency pillar is part of the efficiency enhancers subindex of the GCI. Efficient labor markets are critical for ensuring that workers' skills are allocated efficiently in the economy. As a result, labor markets need to display a level of flexibility that allows for a shifting of labor and wage fluctuations. To ensure that the available labor pool is used most efficiently, workers need to be provided with incentives to give their best efforts in their jobs.

Ukraine ranks an overall 65th in terms of the efficiency of its labor markets, slightly above the country's overall competitiveness assessment and actually ahead of a few countries in a higher income group, such as EU member state Romania, or Turkey (see Table 3.7.1). Labor market efficiency constitutes a competitive advantage in the country's overall competitiveness profile. Over the past three years, Ukraine's ranking on this indicator has deteriorated slightly from 47th position in 2005 despite a small improvement in its score, pointing here again to faster progress in other countries than Ukraine.

This positive assessment is dampened by the fact that many CIS countries rank relatively high on this pillar: Azerbaijan comes in 46th, Russia at 33rd and Kazakhstan at 15th. Although Ukraine receives an overall favorable rating compared to other pillars, the margin compared to some of the CIS countries remains fairly large, pointing to unfulfilled potential in terms of the efficiency of labor markets.

Efficient labor markets mean that companies can adapt their employment structure and wages to their business needs fairly flexibly and without major barriers. This in turn necessitates the availability of a skilled and talented workforce, as well as flexible labor market regulations. The GCI differentiates between two subpillars: flexibility and the efficient use of talent. Ukraine's overall good ranking in the area of labor markets reflects a mixed assessment in these two categories.

Ukraine's labor markets are considered to be fairly rigid in international comparison, as shown by the low

94th rank the country achieves on the related subpillar, down from 85th in the previous year, despite a slight improvement in the score. Here, Ukraine ranks lower than most of the CIS and central European countries (see Table 3.7.1). At the same time, the country uses its available talent relatively efficiently, ranking at 52nd overall and remaining fairly stable with respect to 2006 and improving over 2005. Ukraine's fairly high rank on this indicator is in line with the average performance of CIS countries. Most of them, for example Russia or Kazakhstan, come in significantly higher than Ukraine, contrary to Poland, which ranks only 57th.

Labor market flexibility

Table 3.7.2 provides more details that help to explain Ukraine's performance on this subpillar. Employment relations are still regulated by a labor code that was inherited from Soviet times with fairly strong employee protection. It is not surprising that hiring and firing regulations are fairly rigid. Ukraine ranks 103rd in the entire sample in terms of rigidity of employment. The score on this index, which was developed by the World Bank, has remained stable over the past year, although it has deteriorated with respect to 2005 when Ukraine ranked 62nd on this indicator. By law, labor markets are considered fairly rigid, however, hiring and firing is not costly for Ukrainian companies. The cost of firing one employee amounts to 13 weeks of wages, which gave Ukraine over the past three years a rank in the top 20 on the related World Bank indicator. In Russia, for example, it costs 17 weeks of wages to dismiss an employee. Business leaders responding to the Executive Opinion Survey confirm this result. When asked if hiring and firing is impeded by regulations, they respond favorably with a fairly high score of 4.9, which corresponds to rank 16 in the GCR sample.

The relationship between employers and employees is fairly confrontational, ranking Ukraine at 86th position. Interestingly, the situation in this respect has worsened over the past three editions. This is consistent with the country's falling unemployment rate which went down from 11.6% in 2000 to 6.8% in 2006. The booming economy certainly increased the negotiating power of trade unions, as it became more difficult for companies to find appropriately skilled workers and easier for employees to find a job. Despite tense relationships, employers consider that they are fairly free to determine wages in line with their needs as reflected in the 49th rank with respect to the flexibility of wage determination. On this indicator, the trend over the past years has been positive.

Although overall labor costs are still fairly low in Ukraine, employees and employers are heavily burdened by high non-wage labor costs. Social security costs and taxation are among the highest in the world. The World Bank estimates that non-wage labor costs amount to 38.8% of a worker's salary, which is one of the highest ratios in the world.[10] In the GCR sample, only Italy, China, France and Belgium have higher shares. Similarly, the total tax rate, which also includes income tax, is very high in international comparison (101st) and Ukraine has been falling back over the past few years (see Section 3.6).

Efficient use of talent

Efficiency in the use of talent is one of Ukraine's strong points. In this area, it is worth highlighting the position of women in the labor force. A legacy of the Soviet system, which supported gender equality, it has been common for women in the past 50 years to pursue higher education and to work in equal positions. The transformation reinforced this phenomenon, as women often coped better with the need for flexibility and career change during this time. As a result, Ukraine, unlike many other more developed countries, makes very good use of its available male and female talent. The country ranks 26th in the entire GCR sample, and this rank has remained stable over the past few years.

At the same time, brain drain continues to be a serious problem. Ranked at 93rd, Ukraine is not able to retain many of its well-educated people who are looking for better employment opportunities abroad, in particular in neighboring EU member states and Israel. It is worrying that despite the economic upswing, democratization and a reduction in the unemployment rate, the assessment of the degree of brain drain has remained equally serious over the past few years. Other eastern European countries have followed a similar path, yet with rising standards of living and economic dynamism many former immigrants returned to their country, bringing the knowledge of languages, foreign countries, technologies and management that often greatly facilitate international business. In Ukraine, the problem would likely be amplified with the country's EU accession provided that the liberty of movement is negotiated, as has been witnessed following the 2004 accession of central European countries.

Somewhat surprisingly, given the history of an equalized wage system in the Soviet Union, pay and productivity are considered to be fairly closely related (26th) and this relationship has become stronger over the past few years. Here, Ukraine with a value of 4.8 out of 7 is at the same level as the world's most developed economies such as the United Kingdom (4.8) Denmark (4.9) and even close to the United States (5.1), as shown in Figure 3.7.1. Years of recession have increased the pressure on employees to perform and this result must also be seen in light of the very low wages compared to neighboring countries. If wages can serve as a strong incentive, individual labor productivity can be more easily controlled, which is of key importance for investors, but also for increasing wages and the standard of living over the medium to long term. In line with these results, when asked to describe the most problematic factors for doing business, business leaders place little importance

Table 3.7.1 Ukraine's result on Labor Markets efficiency in an international context

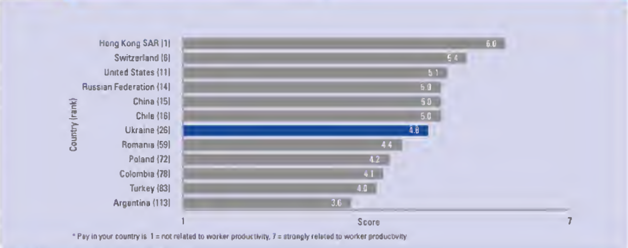
	7th pillar: Labor market efficiency		A. Flexibility		B. Efficient use of talent	
Country/Economy	Rank	Score	Rank	Score	Rank	Score
United States	1	5.7	3	5.8	1	5.6
Singapore	2	5.7	1	6.2	13	5.1
Switzerland	3	5.6	4	5.7	2	5.6
Hong Kong SAR	4	5.6	2	5.9	6	5.4
Denmark	5	5.5	5	5.7	7	5.3
Iceland	6	5.5	9	5.5	3	5.4
United Kingdom	7	5.3	10	5.3	10	5.2
Canada	8	5.2	13	5.3	11	5.2
New Zealand	9	5.2	6	5.5	27	4.8
Japan	10	5.1	18	5.1	16	5.1
Chile	14	5.0	14	5.2	37	4.7
Kazakhstan	15	5.0	15	5.2	33	4.7
Malaysia	16	4.9	19	5.1	30	4.8
Estonia	26	4.8	65	4.5	17	5.0
Russian Federation	33	4.7	58	4.6	25	4.8
Lithuania	44	4.5	90	4.3	36	4.7
Azerbaijan	46	4.5	34	4.9	65	4.1
Poland	49	4.4	54	4.6	57	4.3
China	55	4.4	111	4.0	24	4.8
Croatia	56	4.4	79	4.4	49	4.4
Hungary	58	4.4	89	4.3	47	4.4
Ukraine	**65**	**4.3**	**94**	**4.2**	**52**	**4.4**
Romania	85	4.1	96	4.2	67	4.1
Mexico	92	4.1	86	4.3	87	3.9
India	96	4.1	92	4.3	88	3.9
Brazil	104	4.0	122	3.6	55	4.3
Turkey	126	3.6	113	3.9	118	3.3
Argentina	129	3.5	131	3.0	69	4.0

Source: World Economic Forum 2007

Table 3.7.2 Ukraine's performance in the labor market efficiency pillar in detail

	2007-2008 (out of 131)		2006-2007 (out of 122)		2005-2006 (out of 114)	
Indicator	Rank	Score	Rank	Score	Rank	Score
7th pillar: Labor market efficiency	**65**	**4.3**	**62**	**4.2**	**47**	**4.2**
A. Flexibility	**94**	**4.2**	**85**	**4.2**	**35**	**4.7**
Cooperation in labor-employer relations	86	4.4	70	4.4	52	4.5
Flexibility of wage determination	49	5.4	57	5.2	61	5.0
Non-wage labor costs	120	38.8	111	39.1	n/a	n/a
Rigidity of employment	103	55.0	97	55.0	62	41.0
Hiring and firing practices	16	4.9	20	4.8	13	4.9
Extent and effect of taxation	123	2.4	108	2.4	110	2.1
Total tax rate	101	60.3	90	60.5	n/a	n/a
Firing costs	17	13.0	15	13.0	14	13.0
B. Efficient use of talent	**52**	**4.4**	**49**	**4.2**	**64**	**3.7**
Pay and productivity	26	4.8	40	4.4	35	4.5
Reliance on professional management	102	3.9	91	3.8	81	3.9
Brain drain	93	2.7	83	2.7	83	2.7
Female participation in labor force	26	0.9	26	0.9	n/a	n/a

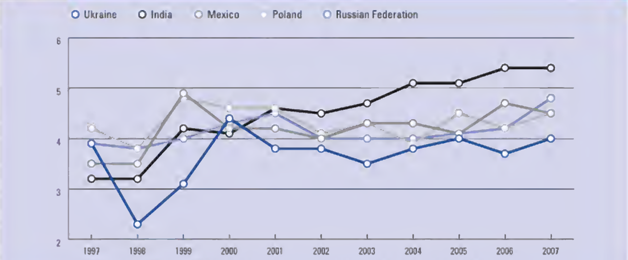
Figure 3.7.1 Pay and productivity in Ukraine in international comparison*



* Pay in your country is 1 = not related to worker productivity, 7 = strongly related to worker productivity

Source: World Economic Forum, Executive Opinion Survey

Figure 3.7.2 Reliance on professional management, 1997- 2007



Note Survey results in this figure are different from those entering the GCI See Chapter 1 for details about the calculation of the GCI results

Source: World Economic Forum, Executive Opinion Survey

on the poor work ethic in the national labor force. Only 3.1% of the responses indicated this as one of the five most important factors.[69]

One problem area that emerges from the Executive Opinion Survey results is the lack of professional management in companies. Ukraine ranks a low 102nd on this indicator, down by 11 compared to last year. Although the score is improving, the trend over the past 10 years has remained behind the results achieved in other countries (see Figure 3.7.2). One example is India, which has continuously improved over the past 10 years, moving from a low value of 3.2 in 1997 to 5.4 in 2007. The weak performance of Ukraine in this respect is probably to a large extent related to an absence of high-level management schools and experienced managers, and to a lesser extent is an expression of nepotism and favoritism. If qualifications for a manager are not clear and universally accepted, the selection of candidates is often done from among a personal network, and is based on criteria other than qualifications.

3.8 Financial market sophistication

Ukraine's financial sector is not yet ready to fulfil the role of an efficient financial intermediator. The country ranks 85th with respect to financial market sophistication, down from 63rd in 2006.[70] Interestingly, Ukraine's financial sector is assessed as weaker than Kazakhstan's, and is only slightly ahead of Azerbaijan's. However, it is in significantly better shape than the Russian financial institutions, which rank 109th in the overall sample (see Table 3.8.1).

The main challenge facing the sector is how to address the low efficiency of financial intermediaries. Here, Ukraine ranks 93rd, pointing to a need for upgrading financial institutions. At the same time, the good news is that the banking sector is overall relatively stable: with a score of 4.5 out of 7, it ranks 75th on this indicator. However, business leaders assessed the trustworthiness of the banking sector this year as significantly lower than last year, although the efficiency of financial markets has been improving over the past two years.

An efficient financial sector allocates savings and international investments to their most productive uses at a reasonable cost. Because business investment is most critical to productivity increases, economies require sophisticated financial markets that can make capital available for investment through diverse financial products and services, such as loans, equity finance and venture capital. At the core of a well functioning and stable financial sector is the ability to assess risk which ensures stability of the banking sector.

In socialist economies banks were owned and monitored by the state and allocated finance according to a five-year plan rather than a risk assessment. At the onset of transition, the institutional framework for regulating the banking sector, a diversified financial infrastructure as well as capacity to assess risk, were to be developed. In many countries, foreign direct investment in privatized state banks was a main instrument in this process, as it allowed a transfer of know-how and managerial experience into the countries. In Ukraine, foreign investment into the banking sector has been increasing between 2002 and 2006. The share of fully foreign-owned banks increased from 7% to 11% over this period.[7]

Efficient financial markets enable the financial sector to provide expanding businesses with the necessary capital for investment through a portfolio of financial products and services that respond to their different needs.

The level of sophistication of products and services offered by the financial sector is poorly assessed by business leaders. Ukraine ranks 90th on this indicator, with a fairly low score of 3.3. The score has slightly improved since 2005. This poor result is hardly a surprise given that the vast majority of Ukrainian banks are fairly young and have very small structures, while a few large banks dominate the market; 53.4% of the assets are concentrated in the 10 largest banks. There are 111 banks with fewer assets than US$ 150 million (September 2006).[72] Most of the small banks have been founded by the enterprises to which they provide credit and are only active at a regional level.

Overall, Ukraine lacks proper equity financing instruments. Financing through the equity market is judged as difficult by the business community, placing the country at 93rd position in the overall sample, down from 82nd in 2006, despite a slightly improving score. The problems related to stock markets are well known and have been extensively analysed by many international

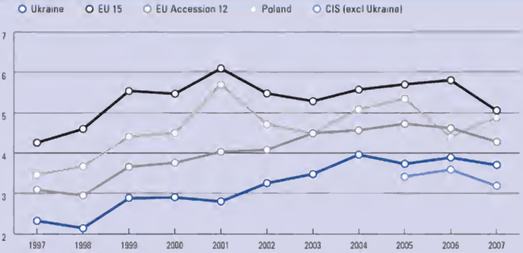
Table 3.8.1 Ukraine's performance in the financial market sophistication pillar in international comparison

Economy	8th pillar: Financial market sophistication Rank	8th pillar: Financial market sophistication Score	A. Efficiency Rank	A. Efficiency Score	B. Trustworthiness and confidence Rank	B. Trustworthiness and confidence Score
Hong Kong SAR	1	6.2	1	5.9	1	6.6
United Kingdom	2	6.2	2	5.8	2	6.5
Singapore	3	6.0	4	5.7	4	6.3
New Zealand	4	6.0	3	5.7	5	6.3
Ireland	5	5.9	6	5.7	8	6.2
Denmark	6	5.9	9	5.6	7	6.2
Australia	7	5.9	16	5.3	3	6.4
Luxembourg	8	5.8	12	5.5	6	6.2
Sweden	9	5.7	7	5.6	14	5.9
Israel	10	5.7	8	5.6	13	5.9
United States	11	5.7	5	5.7	21	5.7
Malaysia	19	5.5	17	5.2	19	5.7
Chile	26	5.2	22	5.0	35	5.3
Estonia	31	5.1	21	5.1	45	5.1
India	37	4.9	37	4.7	41	5.1
Hungary	51	4.6	55	4.3	49	5.0
Lithuania	54	4.6	48	4.4	56	4.8
Turkey	61	4.4	43	4.5	82	4.3
Poland	64	4.3	58	4.2	78	4.4
Mexico	67	4.3	57	4.2	83	4.3
Croatia	68	4.3	73	3.8	58	4.7
Brazil	73	4.1	71	3.8	74	4.5
Romania	78	4.0	70	3.8	89	4.3
Kazakhstan	80	4.0	68	3.9	97	4.2
Ukraine	**85**	**4.0**	**93**	**3.4**	**75**	**4.5**
Azerbaijan	91	3.9	99	3.4	81	4.4
Russian Federation	109	3.6	87	3.5	117	3.7
Argentina	114	3.5	105	3.3	118	3.7
China	118	3.3	97	3.4	127	3.3

Table 3.8.2 Ukraine's performance in the labor market efficiency pillar in detail

Indicator	2007-2008 (out of 131)		2006-2007 (out of 122)		2005-2006 (out of 114)	
	Rank	Score	Rank	Score	Rank	Score
8th pillar: Financial market sophistication	**85**	**4.0**	**63**	**4.1**	**88**	**3.5**
A. Efficiency	**93**	**3.4**	**85**	**3.1**	**82**	**3.1**
Financial market sophistication	90	3.3	82	3.2	84	3.1
Financing through local equity market	93	3.8	89	3.8	83	3.8
Ease of access to loans	71	3.2	67	3.0	75	2.7
Venture capital availability	56	3.2	61	3.1	67	2.9
Restriction on capital flows	102	3.9	n/a	n/a	n/a	n/a
Strength of investor protection	105	3.7	96	3.7	n/a	n/a
B. Trustworthiness and confidence	**75**	**4.5**	**41**	**5.1**	**93**	**3.9**
Soundness of banks	119	4.5	108	4.4	95	4.3
Regulation of securities exchanges	115	3.2	n/a	n/a	99	2.9
Legal rights index	8	8.0	8	8.0	22	6.0

Figure 3.8.1 Ease of raising money through the local stock market*, 1997-2007



Note. Survey results in this figure are different from those entering the GCI. See Chapter 1 for details about the calculation of the GCI results.
* Raising money by issuing shares on the stock market in your country is: 1 = impossible, 7 = very easy

Source: World Economic Forum, Executive Opinion Survey

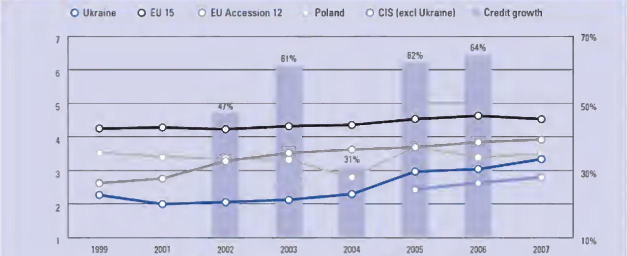
institutions. Over the past three years, Ukraine has been stagnating on the GCI indicator that captures the ease of obtaining finance through stock markets (Figure 3.8.1). From 1997 to 2007, Ukraine remained significantly below the level of EU Accession 12 countries and there is no sign that the country is catching up.

There are critical challenges related to establishing an effective regulatory structure for stock markets. The business community considers stock market regulation in Ukraine insufficient, which undermines trust in the stock markets. This assessment has worsened between 2005 and 2007, falling from 99th to 115th rank. An improvement may be expected in the course of preparation for accession to the European Union, which will require a general overhaul of the financial markets regulations scheme.[71]

Another important challenge is the need for upgrading corporate governance standards, which currently impede a proper valuation of companies for IPOs (initial public offerings). There is also a need for shareholder protection mechanisms. As elaborated on in Section 3.1, poor or non-existent corporate governance standards are among the biggest obstacles to Ukrainian competitiveness. On all variables assessed under this category, Ukraine ranks among the weakest performers in the GCR sample. This weakness is reinforced by the poor protection of investors. With a ranking of 105th on this variable, the country's investors are among the least protected worldwide, which severely increases investment risk.

For companies looking for finance, obtaining loans from banks is not an easily accessible alternative. Although in international comparison Ukraine does moderately well on this indicator, ranking 73rd, the score of 3.2 indicates that difficulties in obtaining loans are persisting, although the situation has drastically improved over the past few years. In 2005, Ukraine scored 2.7. Between 2001 and 2005, Ukraine had one of the highest rates of real credit growth among the transition economies reaching almost 40% annually on average and over 60% in 2006.[72] By comparison, Russia's real credits grew on average by only slightly over 20% a year over the same period.

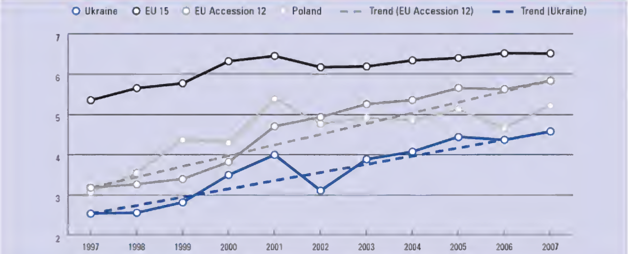
Figure 3.8.2 Availability of loans* and credit growth, 1999-2007



Note: Survey results in this figure are different from those entering the GCI. See Chapter 1 for details about the calculation of the GCI results.
* How easy is it to obtain a bank loan in your country with only a good business plan and no collateral? 1 = impossible, 7 = easy

Source: World Economic Forum, Executive Opinion Survey

Figure 3.8.3 Soundness of banks*, 1997-2007



* Banks in your country are: 1 = insolvent and may require a government bailout, 7 = generally healthy with sound balance sheets
Note: Survey results in this figure are different from those entering the GCI. See Chapter 1 for details about the calculation of the GCI results

Source: World Economic Forum, Executive Opinion Survey

This development is reflected in the much easier availability of loans as assessed by business leaders in their responses to the Executive Opinion Survey, as can be seen in Figure 3.8.2. In their view, between 2004 and 2007, Ukraine has made some good progress in terms of the availability of loans. It almost closed the gap with respect to Poland, although it still lags behind the average of the EU Accession 12. The growth of credit over this period underpins the observation that it has become much easier to obtain credit for enterprises over the past few years.

Interestingly, Ukraine compares rather favorably on the availability of venture capital at the international level. However, the fairly low score on this indicator points to weaknesses in this area as well. Compared to other forms of financing, venture capital is not considered readily available, along the lines of equity financing. However, in international comparison, venture capital is relatively easy to obtain. The reason for this may be that given other impediments to new enterprise creation, fewer start-ups are created and to them venture capital is as available as in other countries.

The restriction of capital flows generally limits the efficiency of the financial sector in a country. Ukraine places 102nd on the related GCI indicator. However, when asked to rate the five most important obstacles to doing business, Ukrainian business leaders have rated capital restrictions as one of the least important issues. Therefore, although capital restrictions appear to persist, they do not impede the development of business activity.

In terms of trustworthiness of the banking system, Ukraine is placed 75th, up from 93rd in 2005, which points to a positive trend in the evolution of the banking sector.[73] However, a look at the data behind this improved performance shows that Ukraine's progress has been mixed and that efforts must continue. In terms of the soundness of banks, Ukraine's assessment has been improving, but losing ground in international comparison over the past three years. While the score has improved, the ranking in the overall sample fell. Over the past 10 years, the overall tendency on this indicator has been very positive, but the gap with respect to countries that have joined the EU since 2004 has widened (see Figure 3.8.3). This clearly shows the benefits of EU accession that have provided additional motivation and assistance for reforming the banking sector and the appropriate regulatory structures. In Ukraine, over the past years, the share of non-performing loans in the overall banking sector has decreased from about 30% in 2003 and 2004 to 17.9% in September 2006.[76] At the same time, banks continue to be exposed to a high exchange rate risk, given that a large share of loans is denominated in foreign currency.[77]

3.9 Technological readiness

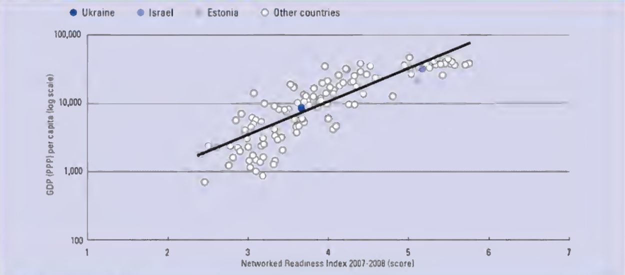
Technological readiness measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries. It is a crucial concept, as the use of technologies explains a significant share of the growth differences between countries. In this context, of particular importance are information and communication technologies (ICT), which have evolved into the general purpose technology of our time. Today, ICT access and use are fundamental to determine an economy's overall level of technological readiness because it provides critical spillovers to other sectors in addition to its role as infrastructure for commercial transactions. It is widely accepted that the introduction of ICT, including the Internet, was one of the main drivers of productivity improvements in the US and Europe in recent years. In this context it is important to note that technology does not have to be produced at home to benefit a country. For countries at a more basic stage of development, such as Ukraine, the ability to adopt technologies from abroad is even more important if a country is not to lag behind in terms of development.

Chart 3.9.1 shows the relationship between the World Economic Forum's Networked Readiness Index (NRI) and GDP per capita for the countries covered by *The Global Information Technology Report*. As explained in Chapter 5 in more detail, the Networked Readiness Index measures the ability of a country to benefit from ICT for the purpose of development. GDP is highly correlated with the score of the NRI, and although it does not imply causality, it is possible to draw some conclusions for Ukraine.

Countries below the line are more aggressive in adopting ICT given their level of income than those that are above the line. Ukraine is placed slightly above the trend line, pointing to a level of adoption of ICT in line with its income. However, given the country's relatively well educated labor force and the capacity of its research institutions, Ukraine could be expected to rank higher to make ICT one of the major drivers of its development. Most transition economies have achieved a significantly higher level of networked readiness compared to their income level. The leader among these countries is Estonia, which through its visionary ICT promotion programme has realized significant productivity gains. Box 3.9.1 outlines Estonia's key factors of success in promoting ICT. Despite the very different sizes of the countries, a number of important lessons can be drawn from Estonia for Ukraine or some of its regions.

A look at Ukraine's ranking on the technological readiness pillar in international comparison (Table 3.9.1) confirms that its performance is clearly not up to its potential, given the characteristics of the country.

Figure 3.9.1 Networked Readiness Index versus GDP per capita



Source: World Economic Forum; IMF 2007d

Table 3.9.1 Technological readiness in Ukraine in international comparison

Country/Economy	9th pillar: Technological readiness Rank	Score
Sweden	1	5.9
Iceland	2	5.8
Switzerland	3	5.7
Netherlands	4	5.7
Denmark	5	5.6
Hong Kong SAR	6	5.5
Korea	7	5.5
Norway	8	5.5
United States	9	5.4
Luxembourg	10	5.4
Estonia	19	5.1
Malaysia	30	4.3
Lithuania	38	4.0
Hungary	41	3.9
Chile	42	3.9
Croatia	49	3.5
Poland	51	3.4
Turkey	53	3.4
Brazil	55	3.3
Romania	59	3.3
Mexico	60	3.2
India	62	3.2
Russian Federation	72	3.0
China	73	3.0
Kazakhstan	77	3.0
Argentina	78	3.0
Azerbaijan	83	2.9
Ukraine	**93**	**2.7**

With a rank of 93, Ukraine is the lowest ranking economy among the comparator countries. Even countries with a slightly lower income, such as Azerbaijan, have achieved better results on this pillar. Ukraine also lags significantly behind the central European EU members such as Poland, Hungary and the Baltic states. The large size of the country may be one factor, because technological readiness requires significantly higher investments in infrastructure. However, even countries much larger in terms of population and area, such as Russia, Turkey, and Brazil, achieve much higher results.

Over the past few years Ukraine has realized some improvements in technological readiness and the score on this indicator improved from 2.5 to 2.7 between 2006–2007 and 2007–2008. But despite an increasing score, the ranking has dropped from 86th to 93rd over the same time period. A closer look at the detailed results shows the main reasons behind this development.

Consistently over the past years the composition of incoming FDI has not contributed to fostering technological progress in the country, reflected in the very low 106th rank for the extent to which FDI is a source of new technology. Although it must be noted that the trend over the past few years has been positive and Ukraine's progress in attracting technology intensive FDI has been faster than other countries, as reflected in the improving score and rank on this variable.

FDI can be a major means of transferring technology and know-how. In many transition economies, such as Hungary or the Baltic countries, FDI has played a significant role in increasing the technological intensity of the manufacturing and services sectors. In Hungary, technology-intensive exports have increased significantly following investments in ICT industries. Some of the factors that have contributed to the development of the Hungarian ICT sector are also among the advantages of the Ukrainian economy, although at a lower level. The availability of skilled human capital in particular in science and engineering[77], where Hungary ranks 40th, is fairly good in Ukraine (70th) and the infrastructure for ICT is fairly well developed in both countries. Ukraine ranks 56th in terms of broadband Internet subscribers and 52nd in terms of the number of telephone lines, an indicator captured in the infrastructure pillar. Hungary ranks 36th and 23rd on these two variables, respectively. Mobile subscriptions have been on the rise in Ukraine over the past few years (79th rank) and are likely to increase further with rising per capita income. At the same time, Internet use and personal computers are not very widespread. With only 3.9 PCs per 100 people, Ukraine ranks behind countries with much lower income levels, such as China (4.1) or Zimbabwe (7.1). It also ranks behind Russia (12.1) and far behind Estonia (48.9), the best performer in the region on this indicator.

Table 3.9.2 Ukraine's performance in the technological readiness pillar in detail

Indicator	2007–2008 (out of 131) Rank	Score	2006–2007 (out of 122) Rank	Score	2005–2006 (out of 114) Rank	Score
9th pillar: Technological readiness	**93**	**2.7**	**86**	**2.5**	**85**	**2.6**
Availability of latest technologies	97	3.4	87	2.8	80	2.8
Firm-level technology absorption	91	4.4	93	4.1	82	4.0
Laws relating to ICT	83	3.3	88	2.9	84	3.0
FDI and technology transfer	106	4.2	111	4.0	108	3.7
Mobile telephone subscribers	79	37.0	70	28.5	78	13.6
Internet users	77	9.8	72	7.8	74	5.3
Personal computers	88	3.9	85	2.8	82	2.4
Broadband Internet subscribers	56	1.4	54	1.4	n/a	n/a

Box 3.9.1 Best practice in technological readiness*

Estonia is widely considered a pioneer in promoting information and communication technologies (ICT). Although the case of Ukraine is different because of the much larger size of the country and because Estonia was assigned the task of advanced electronic and software research in the former Soviet Union, some of the measures implemented in Estonia may prove to be interesting examples for Ukraine. Today, all Estonian schools are connected to the Internet, 93% of the population are mobile telephone subscribers, 34% of the households have a computer at home, and 54% of the population aged 6 to 74 are Internet users.

There are a number of key factors that have contributed to this success. The government and its agencies have pioneered the use of ICT in day-to-day work and communication with citizens and businesses, thereby not restricting their role to merely setting and administering the regulatory framework. A number of services have been made available for the business sector over the Internet or mobile phone networks.

Visionary leadership has also played a major role in advancing the country's level of ICT development. In particular Mart Laar, Estonia's Prime Minister from 1992 to 2002, declared leadership in the area of ICT a national aim and focused resources and efforts around it. The support of the broad public for this bold programme was obtained through declaring free access to the Internet, which is a constitutional right for all Estonians.

Public private partnerships were a major building block of the strategy, which allowed the government to implement the programme despite limited public resources. A precondition for this was the liberalization of the telecommunications industry and the early adoption of the Internet by government agencies. The public-private partnerships included cooperation between universities and telecommunications companies that led to the development of new technologies. Estonian Mobile Telephone, the country's largest mobile telephone operator, has played a role in supporting start-ups and providing funding and technology support following a long-term strategy, rather than focusing on immediate financial return.

The initial steps taken inside the country have made Estonia an interesting place to invest, despite its small size. Foreign companies have invested considerable amounts into the modernization of ICT infrastructure and Estonia has become a good place for testing new products and services. The introduction of e-government has propelled the demand for e-based applications in other areas, such as banking. Estonian banks were among the pioneers of online banking and mobile services and today, 72% of Internet users use online banking for their daily transactions.

The high level of e-readiness among the population and the willingness of Estonians to adopt new technologies have contributed a great deal to this success and Estonia has emerged into one of the foremost producers of software for innovative banking applications, as well as encryption and mobile solutions. This has allowed Estonia to move away from low-cost production into small and specialized segments of the market, where a high level of specific expertise is needed.

A key success factor was the outreach of mobile solutions and WiFi into rural areas and to poorer families under the Village Road project, which aims to cover 90% of the Estonian territory with quality Internet connections. Currently, more than 50% of the country has been covered.

* Based on Dutta 2006.

Respondents to the Executive Opinion Survey indicate that the ability of Ukrainian companies to absorb technology is limited in international comparison. Ukraine ranks 91st on this indicator, although this fairly low rank hides a relatively high score of 4.4, as countries' performance on this indicator is fairly close. Hungary, for example, with a score of just 5.0 achieves a significantly higher rank of 48th. Ukraine ranks only a few positions behind Poland, 76th with a score of 4.5 and ahead of Russia (103rd).

Given the fairly low absorption capacity of firms, it is not surprising that the availability of the latest technologies in the country is limited. Here, Ukraine ranks a fairly low 97th, behind Kazakhstan (90th) and Poland (80th) and only slightly ahead of Russia (99th). The low level of availability of advanced technologies can also be explained by the fact that only very few of the technologies are sourced through licensing from abroad. On this Executive Opinion Survey indicator, which does not enter the technological readiness pillar, the country ranks only 114th, far behind Kazakhstan (93rd) and Russia (107th).

But the effective use of ICT for business purposes requires a specific legal framework. In Ukraine, the legal framework for ICT is governed by the Law on Communications enacted in 2003. The law established the National Communication Regulation Commission, which regulates the IT and telecommunications market. A number of laws have been passed that regulate electronic commerce including electronic signature and consumer protection. However, businesses indicated in their replies to the Executive Opinion Survey, that the laws related to the use of information technology are insufficiently developed for the country to take full advantage of the Internet, ranking Ukraine at just 83rd position on this indicator.

Overall, Ukraine's position in technological readiness remains below its potential. Although infrastructure is fairly good, the adoption of technologies by individuals and businesses lags behind and the potential of FDI and licensing for upgrading the country's technological potential remains underutilized.

3.10 Market size

The large size of its market is one of Ukraine's most important advantages, reflected in the country's high 26th rank on the market size pillar, as shown in table 3.10.1. With a population of more than 45 million and a quickly growing GDP per capita, the country is one of the largest economies of central Europe.

The size of the available market is one of the main drivers of productivity through increased competition, specialization and exploitation of economies of scale. The country's geographical position between two large markets – the European Union and the CIS – as well as its cultural heritage, offers significant advantages for expanding imports and exports, which are to a large extent based on the distance between countries as well as language and cultural affinities.

It is therefore not surprising that Ukraine ranks fairly high on both indicators in international comparison, domestic and foreign market size, 27th and 32nd, respectively. It ranks significantly higher than most of the CIS countries except Russia. Yet when comparing Ukraine to countries of a similar size that were very successful in boosting export-led growth, Ukraine's results expose unrealized potential in the area of export development. For example, when comparing Ukraine to Malaysia (see Table 3.10.1), we can see that Malaysia, despite a much smaller domestic market (38th), benefits from large export markets (rank 16), which considerably increases its position on this pillar. Also, as this measure looks at the absolute numbers and adjusts for purchasing power parity, Ukraine's large population and its low price level are playing in its favor. Table 3.10.2 shows in addition to the indexes for domestic and foreign competition that enter this pillar, the components of these two indexes. These allow further analysis of Ukraine's competitive position. While Ukraine ranks quite well with respect to the size of the economy as measured by GDP adjusted for purchasing power because of its fairly large population, it ranks relatively lower in terms of the overall openness of the economy, pointing to further potential that could be tapped. Ukraine ranks 62nd in terms of exports as percentage of GDP and 49th in terms of imports.

In future, the trend on this pillar is likely to be positive. Ukraine's GDP in PPP terms has been catching up over

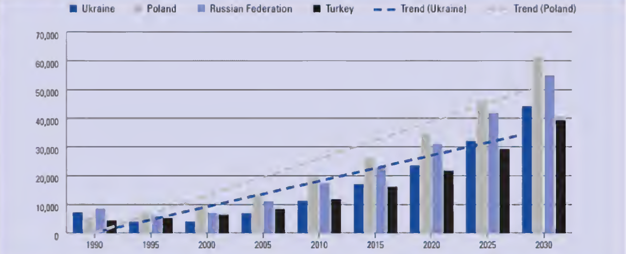
Table 3.10.1 Ukraine's performance in the market size pillar in international comparison

	Market size		A. Domestic market size		B. Foreign market size	
Country/Economy	Rank	Score	Rank	Score	Rank	Score
United States	1	6.8	1	7.0	2	6.3
China	2	6.8	2	6.7	1	7.0
India	3	6.2	3	6.2	4	6.0
Japan	4	6.1	4	6.2	5	5.8
Germany	5	5.9	5	5.8	3	6.2
United Kingdom	6	5.7	6	5.7	6	5.8
France	7	5.7	7	5.7	9	5.6
Italy	8	5.6	8	5.6	10	5.6
Russian Federation	9	5.5	10	5.5	7	5.7
Brazil	10	5.4	9	5.5	22	5.2
Mexico	13	5.3	12	5.3	17	5.4
Turkey	18	5.0	16	5.0	27	5.0
Poland	22	4.9	22	4.8	23	5.1
Argentina	23	4.8	20	4.8	34	4.8
Ukraine	**26**	**4.6**	**27**	**4.5**	**32**	**4.9**
Malaysia	29	4.5	38	4.2	16	5.4
Hungary	41	4.3	43	4.1	35	4.8
Romania	43	4.2	39	4.2	52	4.3
Chile	47	4.1	46	4.0	43	4.5
Kazakhstan	56	3.9	54	3.8	49	4.4
Croatia	64	3.4	66	3.4	71	3.7
Lithuania	67	3.4	69	3.3	66	3.8
Azerbaijan	71	3.3	76	3.1	67	3.8
Estonia	91	2.9	96	2.7	78	3.5

Table 3.10.2 Ukraine's performance in the market size pillar in detail

Indicator	2007-2008 (out of 131) Rank	2007-2008 (out of 131) Score	2006-2007 (out of 122) Rank	2006-2007 (out of 122) Score	2005-2006 (out of 114) Rank	2005-2006 (out of 114) Score
10th pillar: Market size	**26**	**4.6**	**26**	**4.9**	**25**	**4.4**
A. Domestic market size	**27**	**4.5**	**28**	**4.8**	**30**	**4.2**
Domestic market size index	27	4.5	28	4.8	30	4.2
GDP valued at PPP	29	356,228	27	333,070	29	311,900
Imports as a percentage of GDP	49	52.6	50	48.7	36	57.6
Exports as a percentage of GDP	62	44.6	39	50.3	16	67.7
B. Foreign market size	**32**	**4.9**	**27**	**5.0**	**22**	**5.2**
Foreign market size index	32	4.9	27	5.0	22	5.2

Figure 3.10.1 Actual numbers and projections for GDP (PPP) per capita for Ukraine and selected countries, 1990-2030



Source: EIU 2007

the past years, and projections maintain that GDP will continue to grow exponentially, as shown in Figure 3.10.1. However, the data show that Ukraine is not likely to catch up with more developed countries, such as Poland, for several years. But it will most likely overtake Turkey by 2015.

Ukraine's main export markets are its immediate neighbors, the European Union and Russia. There is certainly a lot of further potential to be exploited. In 2006, 28.3% of all goods were exported to the EU, while 22.8% of all Ukrainian exports went to Russia. Iron and steel accounted for 33.4% of overall exports. Overall, Ukraine's merchandise exports grew by 20% in 2006, compared to 8% growth in world merchandise trade. As we can see from Figure 3.10.2 Ukraine's world trade share increased 10-fold over the past 15 years and appears to be stabilizing since 2004.

Ukraine has been rather successful in ensuring preferential market access for its exporters, who do not face major tariff barriers in the two most important markets, Russia and the European Union.

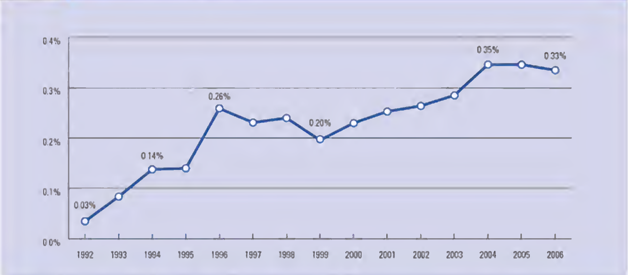
Currently, Ukraine enjoys preferential duty-free access to CIS markets while the preference margin in EU markets amounts to one percentage point on a weighted tariff of 3.2%. Turkey, the third most important Ukrainian market, applies a weighted tariff of 7.1%. The unweighted tariff applied by the EU amounts to 6.2% pointing to some peaks in the tariff structure.[70] This difference could be interpreted in two ways. Tariffs either successfully block imports in sectors where Ukraine is competitive, or they apply to goods where Ukraine has no capacity to export.

In addition to WTO membership, a way to further increase the size of the market for Ukraine is to pursue accession to the European Union. So far, no clear prospect for accession has been expressed by the EU. It would allow Ukrainian exporters to further reduce the tariff and non-tariff barriers they face in major markets. In addition to the reduction of customs barriers, which has so far taken place to a large extent, EU accession would result in an approximation of regulatory environments and technical standards, all of which would reduce the cost of Ukrainian goods in EU markets and would particularly benefit the country's agricultural sector.

3.11 Business sophistication

The business sophistication pillar is the 11th pillar of the GCI and togther with the innovation pillar is one of the

Figure 3.10.2 Ukraine's share in world trade 1992-2006



Source: United Nations Statistics Division, United Nations Commodity Trade Statistics Database (COMTRADE)

two pillars of the GCI's innovation and sophistication subindex.

The business sophistication pillar examines some of the business-related microeconomic factors that contribute to making a country competitive. As pointed out by Porter et al. (2007), competitiveness not only depends on the macroeconomic, political, legal, and social circumstances that underpin an economy, but also on its microeconomic foundations, including the quality of business operations. A sound and stable context certainly improves the opportunity to create wealth, but does not create it. Wealth is actually created within firms and the quality of operations of firms becomes increasingly crucial as countries develop. Unlike in other pillars, the private sector plays the key role in this dimension of competitiveness. In improving infrastructure, healthcare, education, domestic competition, or financial market sophistication government tends to play the leading role. But when it comes to improving business sophistication, the business sector has to take the lead.

Because the GCI methodology assumes that business sophistication and innovation factors are more important for countries that produce at the higher end of the value chain, little weight is placed on these factors for countries in more basic stages of development. For countries in stage 1, the combined contribution of these two pillars to the overall GCI score is 5%, so that stage 1 countries are not strongly penalized for not performing well.[40] Yet this aspect of competitiveness should not be overlooked by those countries for at least three reasons. First, it obviously does not harm a country if its firms operate in a sophisticated fashion, regardless of its stage of development. Second, clusters, through spillovers, influence economic development, which in turn nurtures further cluster development, thus initiating a virtuous growth cycle. Third, because business sophistication will eventually become a must, taking early action is important to prepare for more advanced development levels.

For countries in stage 3, business sophistication and innovation are crucial factors for improving productivity. Countries reaching this stage no longer compete on the grounds of low cost inputs or simple efficiency. Their competitiveness hinges upon their ability to produce innovative products and services at the technology frontier using the most advanced methods. For this reason, rich countries perform very well in the business sophistication pillar. Among the top 30 countries, 26 are in stage 3. Taiwan, China (in transition from 2 to 3) at 14th, Malaysia (stage 2) at 18th, India (stage 1) at 26th, and the Czech Republic (transition from 2 to 3) at 30th position stand out as remarkable exceptions. Figure 3.11.1 shows how performance in the 11th pillar is tightly linked to national wealth.[41]

As Ukraine is in transition from stage 1 to stage 2 of development, business sophistication currently plays only a minor role for productivity improvements. However, the importance of the pillar is bound to increase with Ukraine's rising income. According to the IMF projection, GDP per capita will reach US$ 3,300 in 2008, which means that Ukraine is moving rapidly towards stage 2, where innovation and sophistication factors become more important.

Currently, Ukraine ranks 81st on this pillar. Its score (3.83) has remained essentially unchanged in the past three editions of the GCI. This is also true for nine of the ten indicators composing this pillar, which all display negligible variations over the past three editions. Unfortunately for Ukraine, maintaining the status quo is not sufficient for retaining a position in the ranking. Countries entering at a higher rank and improving incumbents have caused Ukraine to slide from 69th in 2005 to 2006 to its current position of 81st. Ukraine trails Azerbaijan, but precedes Kazakhstan (85th) and Russia (88th), the only CIS member already in the second stage of development. On average the CIS is far

Figure 3.11.1 Business sophistication scores and ranks by stage of development

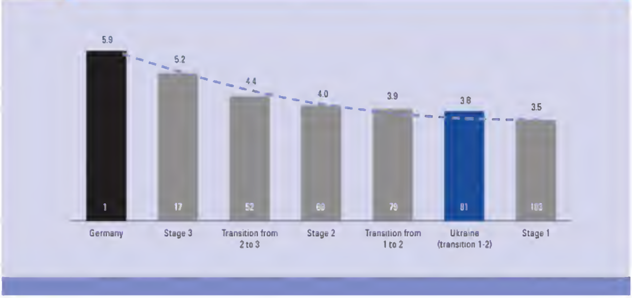
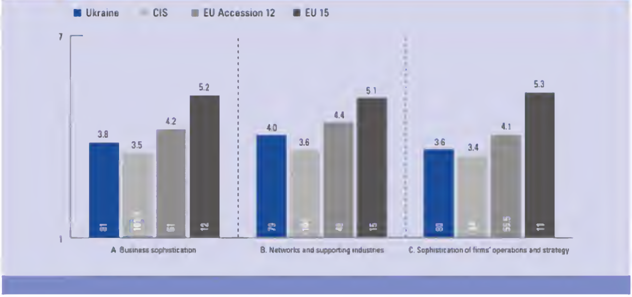


Figure 3.11.2 The business sophistication pillar and its components



below EU standards. Its median rank is just 101.5 whereas the median for the EU Accession 12 is 51 (see Diagram A in Figure 3.11.2). It is worth noting that even the EU Accession 12 (score of 4.2) fall behind the EU average by an ample margin of one full point, highlighting once more the very close relationship between business sophistication and GDP per capita.

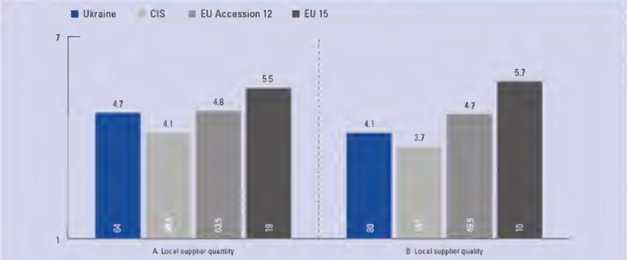
Networks and supporting industries

The networks and supporting industries component assesses the density and the quality of business networks, such as clusters and the quantity and quality of suppliers. Ukraine ranks 79th, in line with its overall performance on the pillar (see Diagram B in Figure 3.11.2), ahead of all CIS countries except Uzbekistan. Azerbaijan, Russia and Kazakhstan, rank 81st, 82nd and 84th, respectively. Ukraine is on a par with Latvia (77th) and Poland (78th), and precedes Bulgaria (87th). Other recent EU members rank better, but are still at a sizeable distance from the best performers.

The first two variables of this component look at the quantity and quality of local suppliers (Figure 3.11.3). Timely and easy access to a wide choice of inputs of good quality and at competitive prices is an important determinant of productivity (Diagram A). A wide base of suppliers ensures the availability of a wide range of inputs and price competition among them. In this dimension Ukraine ranks 64th, ahead of all CIS countries, including Russia.[17] Scorewise, Ukraine (4.14) stands halfway between CIS (3.7) and EU Accession 12 (4.8) averages. EU Accession 12 members remain on average far behind the EU 15.

The second variable looks at the quality of suppliers.[18] The quality of inputs obviously matters greatly as it influences the quality of outputs. Low-quality products are less likely to meet the expectations of international buyers,

Figure 3.11.3 Local suppliers' quantity and quality in Ukraine and selected comparator regions



thereby limiting producers to the domestic market, foregoing revenues from exports and preventing economies of scale. Over the past few years, quality tracking across the entire value chain has become increasingly important for suppliers of multinationals. Improvements in the quality of suppliers are likely to follow from their increasing availability and competition among them. Diagram B shows that there is indeed a link between the two variables. The chasm between developing and the most industrialized countries is even bigger.

The third variable of this component assesses the state of cluster development using the Executive Opinion Survey results.[44] Clusters are geographic concentrations – mainly at the city or regional level, but also in small countries or groups of countries – of companies, suppliers, services, providers and associated institutions in a particular sector of activity. Examples include automotive, information and communication technologies (ICT), biotechnology, or textiles and clothing.

Clusters in general include the necessary infrastructure in particular fields as well as a number of upstream and downstream companies and business support entities.[45] All the firms within a cluster are linked by externalities and complementarities of various kinds. Clusters are beneficial for economic growth, as they tend to lower barriers to entry, thereby intensifying competition. For all of these reasons, location within a cluster allows a company to become more specialized, more productive and more innovative.

Ukraine ranks 89th on this variable, down from 54th in the GCR 2005-2006. As is the case at the pillar level, although its score has remained unchanged in the past three editions (3.22 in 2005-2006 and 3.24 in 2007-2008), Ukraine has lost considerable ground to its peers. Figure 3.11.4 illustrates this erosion. In the 2005-2006 edition of the GCR, Ukraine topped Hungary, Romania, the Slovak Republic, and the Czech Republic. And CIS countries scored on average higher than the EU Accession 12. Two editions later (GCR 2007-2008), the contrast cannot be any sharper: Ukraine and CIS are totally stalled, while the four new EU members exhibit strong improvements, and the EU Accession 12 average has skyrocketed to now approach the EU 15 average. Even more noteworthy are the cases of Vietnam and Sri Lanka, three and two times poorer in terms of GDP per capita respectively, compared to Ukraine. Both countries have surpassed Ukraine, proving that clusters can develop at significantly lower levels of economic development. In fact, 20 countries currently in stage 1 of development (with a GDP per capita lower than US$ 2,000) precede Ukraine on this variable.[46]

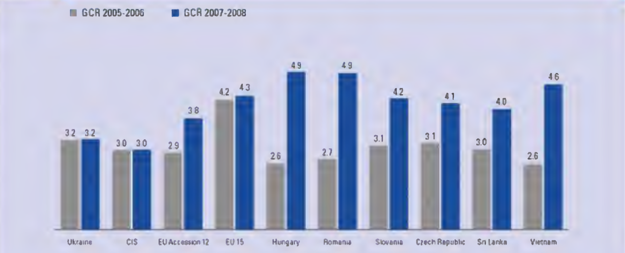
Sophistication of firms' operations and strategy

The second component of the pillar assesses the sophistication of individual firms in terms of production, operations and strategy. Productivity rises when a company improves the operational effectiveness of its activities and gets closer to global best practices. The ability of firms to pursue distinctive strategies that involves differentiated means of production and service delivery also constitutes an important productivity and competitiveness enhancer.

Ukraine places 80th in this component, which includes seven indicators. Here more than anywhere else, differences in performance are striking, but this should come as no surprise. The concepts captured in this component are more important at the higher end of the value chain, where differences between emerging and the most advanced countries tend to be magnified. As depicted in Diagram C of Figure 3.11.2, the average of the EU 15 (5.3) is significantly higher – 1.2 points – than the average of the EU Accession 12 and 1.7 points ahead of Ukraine.

Ukraine ranks 78th as to the nature of competitive advantage, indicating that the competitiveness of Ukrainian

Figure 3.11.4 State of cluster development* for selected countries and regions



* Strong and deep clusters are widespread throughout the economy: 1 = strongly disagree, 7 = strongly agree

firms remains essentially driven by cheap inputs and natural resources extraction, and not by the uniqueness of their products or processes. As for the level of sophistication of production processes, Ukraine does slightly better at 69th. With a score of 3.6, the perception is that in general production uses labor-intensive methods and old technology, rather than the latest, most efficient practices. Ukraine places 78th for the breadth of the value chain, suggesting that not only does the source of comparative advantage reside in unsophisticated products, but also that producers have very little capability in terms of product development, marketing and sales. Ukraine ranks just 87th for the sophistication of firms' marketing techniques.

The last two indicators of this component concern business management. Soundness and professionalism in management are essential in determining a firm's productivity. The leading roles must go to the most capable people, not to the ones with the best connections. Nepotism and favoritism are detrimental to a company, as they undermine the motivation of the personnel and the setting up of a promotion system based upon meritocracy.[87] Equally important is the willingness to delegate authority to ensure operational efficiency, whereby decision and action powers lie with the same person.[88] This also fosters motivation by empowering people, strengthens accountability, encourages the transfer of knowledge and ensures the company's sustainability. Both concepts reflect the need for emerging economies to develop a large pool of skilled managers, and most importantly, to encourage entrepreneurship. Economic development is by no means only a top-bottom, government-driven process. It is very much a bottom-up phenomenon, created by the multiplication of individual initiatives.[89]

In both indicators, Ukraine does very poorly, ranking 101st as to the willingness to delegate authority and 102nd for the reliance on professional management. This is one of the unfortunate legacies of communism. Centralized, planned development, along with the absence of property, left little room for private entrepreneurial undertaking and little understanding of the role of a manager in a market economy. It is therefore not a surprise that other CIS countries perform equally poorly in both indicators. Many sub-Saharan nations, including Tanzania, Nigeria, Kenya and Zimbabwe are ahead of Ukraine on the two indicators.

3.12 Innovation

There is no doubt that for countries close to the technology frontier, research and development followed by commercial innovation, meaning the development of new and commercially viable products and services, are key ways to achieve a sustainable increase in productivity and growth. For countries at the advanced stages of development, promoting innovation should be one of the key priorities. This is reflected in the structure of the GCI, which places a higher weight on this pillar for the more advanced countries that fall into stage 3 of development and a lower weight for countries at lower stages of development, such as Ukraine.

Given its low income and wages, Ukraine can significantly improve productivity through tackling the more basic areas, such as upgrading institutions, increasing the efficiency of goods markets, and strengthening the country's absorption capacity for new technologies. In particular Ukraine's very low absorptive capacity of new technologies indicates that the country's growth could benefit from investment in this area.

Although innovation is not yet a priority area for Ukraine, some observers support the view that it is worthwhile to already take action to support it. The country has an undeniable comparative advantage in this area, which could become an important driver of growth in future. Ukraine should not neglect this potential. The country's high innovative capacity stems from the traditionally strong focus on research and development in the Soviet Union, which still results in strong support by the broad public for promoting innovation. This could provide momentum for implementing a market-oriented innovation promotion programme.

In the innovation pillar of the GCR, Ukraine ranks a relatively high 65th, behind Russia and Poland, but ahead of Kazakhstan and even Romania. This assessment has remained fairly stable over the past two years and is consistent across all the aspects taken into account under this pillar. Businesses assess the capacity for innovation fairly high, placing Ukraine at 40th position in international comparison. This variable assesses the ability of the country's companies to conduct formal research as opposed to licensing or imitating foreign companies. This very good result mirrors the weak assessment of the capacity of Ukrainian firms to absorb technology – as discussed in Section 3.9 – and highlights an important aspect of Ukraine's technology environment. Firms tend to undertake own research and development rather than looking abroad for solutions that may already exist. Interestingly, Ukrainian firms are relying more strongly on their own innovation capacity than firms in the central European EU member countries, as can be seen in Figure 3.12.1.

A comparison with 1998 shows that this trend has strengthened in Ukraine over the past nine years, but has weakened in central Europe. Certainly, this reflects the fact that the process of EU integration has contributed to intensifying the inflow of innovation from abroad into these countries, which in turn has probably crowded out elements of local innovation that proved less commercially viable. In many of the emerging markets that received technologically intensive FDI over the past decades, such as Malaysia or India, this process goes the opposite way. In these countries, companies increasingly innovate locally, benefiting from spillover effects generated by foreign investment in R&D intensive sectors, such as the increasing availability of skills related to developing commercially viable innovation, financing projects, marketability studies and the like.

However, although companies mainly innovate internally, their spending on R&D is not particularly high, reflecting the fact that many of the industries operate at the lower end of the value chain. In terms of company spending on R&D, Ukraine ranks 67th, behind Russia (50th) and Poland (42nd), but ahead of Hungary (68th) and Romania (89th). Between 2000 and 2006, spending on R&D in Ukraine has increased in absolute terms, but decreased as a share of GDP to about 1.0%, as shown in Figure 3.12.2. At the same time, data from the State Statistics Committee of Ukraine[10] and the World Bank[11] indicate, that spending on R&D (as share of GDP) in Ukraine is higher than in many other countries in the region, even in central Europe.

To translate R&D activities into growth, research projects need to map into commercially viable products and services. This is more likely to occur when there is a higher degree of involvement of the private sector in research activity, as public funding tends to favor fundamental as opposed to applied research. One possible way to measure private sector involvement is to look at the share of research funded by the business sector. For Ukraine, the data reveal a fairly low share of public funding, which points to high involvement of enterprises in R&D. This stands in stark contrast to other countries in the region where about two-thirds are funded by the state budget. This ratio amounts to only 40% in Ukraine with a decreasing trend[12] against 65.2% in Poland, and 51.8% in Hungary. More successful innovators tend to increase this share to higher levels, such as Finland, where only 26.3% of all research activities are funded by the public sector.[13] This high level of private sector involvement sector bodes well for Ukraine's innovation capacity, as it ensures that the traditional mismatch between the output of publicly funded research institutions and the needs of companies is kept at a lower level than in other countries in the region.

In addition to the relatively high level of R&D spending, the tertiary education level is also an important precondition for promoting innovation. In Ukraine, like in many other transition economies, the facilitated access to higher education during communist times resulted in a high number of skilled scientists and engineers. When asked about the availability of scientists and engineers, businesses rank the country a still relatively good 70th, above Poland (74th), but behind Russia (37th) and Romania (47th). This is confirmed by the fairly high ratio of researchers relative to the country's population, even when compared to more advanced countries such as Poland or Romania. It has to be noted however, that this ratio as well as the absolute number of researchers have fallen between 2000 and 2006[14] (see Figure 3.12.2). This trend results from higher interest of students in managerial studies rather than in scientific and technical careers.

Both the historically high level of spending and the abundance of human capital has translated into a high density of research institutes, mainly in the area of science and technology. Currently, about 1,452 research institutions are active in Ukraine, of which 1,189 work in scientific and technical areas.[15]

In addition to the number of research institutions, businesses assess the quality of research institutes as relatively good. Ukraine ranks 60th in the entire sample on this indicator, ahead of countries such as Poland (64th), Latvia (70th) or even Italy (96th). This comparatively good assessment has remained relatively stable over the past few years. In parallel, Ukrainian research institutes have been moving slowly but surely towards increasing the share of applied research and reducing the commercially less viable basic research. Between 1996 and 2006, the share of basic research in total research spending has

Table 3.12.1 Ukraine's performance in the innovation pillar in international comparison

Country/Economy	12th pillar: Innovation Rank	Score
United States	1	5.8
Switzerland	2	5.7
Finland	3	5.7
Japan	4	5.6
Israel	5	5.6
Sweden	6	5.5
Germany	7	5.5
Korea	8	5.4
Taiwan, China	9	5.2
Denmark	10	5.1
Malaysia	21	4.5
India	28	3.9
Estonia	31	3.8
Hungary	37	3.6
China	38	3.6
Brazil	44	3.5
Chile	45	3.5
Lithuania	48	3.5
Croatia	50	3.4
Turkey	53	3.4
Azerbaijan	54	3.4
Russian Federation	57	3.3
Poland	58	3.3
Ukraine	**65**	**3.2**
Mexico	71	3.1
Kazakhstan	75	3.1
Romania	76	3.1
Argentina	91	2.9

fallen from 41.5% to 37.0%.[illegible] The relatively well developed cooperation between university institutes and the private sector (65th rank) supports this process, although Ukraine ranks behind some of the comparator countries, such as Poland and Russia on this indicator.

The quality of Ukrainian applied research is confirmed by the high number of utility patents filed in the United States. Ukraine ranks 58th on this indicator, which is a particularly good measure of the international viability of a country's research. With this result the country ranks not far behind Brazil and ahead of India and Romania. However, it must be noted that most countries from the region come in at high ranks on this variable. Yet the number of utility patents in Ukraine has strongly increased over the past few years, confirming that the quality of Ukraine's research is increasingly catching up with international levels.

In the case of Ukraine, because of its fairly well developed research capacity, public support for R&D is important, despite its basic stage of development, to maintain the research capacity in preparation for a higher level of development. But a number of other factors will influence the success of policies promoting R&D, because innovation can only translate into growth if new ideas lead to the development, production and sale of products or services or the improvement of processes.

This requires above all, that innovation is rewarded by secure and well-enforced intellectual property rights. In Ukraine, intellectual property rights are among the most weakly defined and enforced worldwide, placing the country at 108th position out of 131 economies, the second to lowest rank among the comparator countries with only Russia scoring lower. A strengthening of the intellectual property rights regime, and the court system enforcing it, should be the first and most important step towards improving the country's potential for innovation. Addressing the basic institutional weaknesses that hamper business creation and development as outlined in Sections 3.1. and 3.9 will equally support innovation.

In promoting innovation the overarching challenge will lie in setting market-friendly instruments that address the most important market failures intrinsic in innovation, but do not lead to inefficiencies. In this respect, the strong public-private cooperation is a good sign. As a best practice example on how to promote innovation, Box 3.12.1 outlines Israel's experience with implementing innovation promotion instruments.

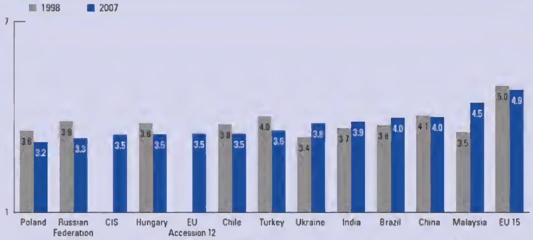
3.13 Summary and conclusions

This chapter assesses the performance of Ukraine across the 12 dimensions of national competitiveness as defined by the Global Competitiveness Index. The detailed

Table 3.12.2 Ukraine's performance in the innovation pillar in detail

Indicator	2007–2008 (out of 131) Rank	Score	2006–2007 (out of 122) Rank	Score	2005–2006 (out of 114) Rank	Score
12th pillar: Innovation	**65**	**3.2**	**61**	**3.2**	**50**	**3.2**
Capacity for innovation	40	3.7	38	3.7	31	3.9
Quality of scientific research institutions	60	3.9	45	3.9	42	4.0
Company spending on R&D	67	3.2	59	3.1	45	3.3
University-industry research collaboration	65	3.1	58	3.0	48	3
Government procurement of advanced technology products	75	3.6	89	3.4	92	3.1
Availability of scientists and engineers	70	4.3	66	4.4	55	4.7
Utility patents	58	0.5	52	0.4	50	0.4

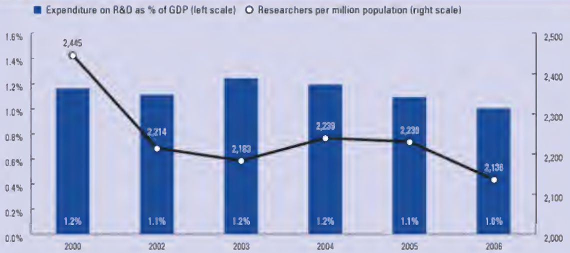
Figure 3.12.1 Capacity for innovation* for selected countries and regions



* Companies obtain technology: 1 = exclusively from licencing or imitating foreign companies, 7 = by conducting formal research and pioneering their own new products and processes

Source: World Economic Forum, Executive Opinion Survey

Figure 3.12.2 R&D activity in Ukraine



Source: State Statistics Committee of Ukraine 2007

analysis shows that in many dimensions Ukraine does not realize its full competitive potential. Although in many areas it has made progress with respect to its own history, in most cases, these advancements have not translated into higher rankings because the pace of improvements is slow compared to that of many other countries.

In the area of institutions, Ukraine fares very poorly, ranking only 115th out of 131 countries, lagging far behind all EU members. Particular areas of weakness include the protection of property rights and the low efficiency of government institutions and private institutions, both of which are assessed as among the least developed in the world. Progress realized over the past years has not been sufficient to increase Ukraine's position in the rankings. Improving the performance of institutions will most likely have spin-off effects. Reduced corruption, improved administrative capacity and a strengthened judiciary will improve the efficiency and enforcement of many other policies.

The assessment in the area of infrastructure is only slightly below the overall assessment at 77th position. While Ukraine has a well developed railroad infrastructure, both air transport infrastructure and the quality of roads will require further investment to bring it to levels that satisfy the needs of the economy.

Equally, Ukraine's macroeconomic environment is considered a competitive disadvantage, albeit by a narrow margin. The country ranks 82nd and it remained roughly stable compared to last year. While progress has been achieved with respect to reducing the budget deficit as well as government debt, the relatively high inflation rate remains an area of concern.

The country fares slightly better with respect to health and primary education, where it ranks 74th. The quality of primary education is assessed as good, yet the

Box 3.12.1 Case study on innovation in Israel: Incubator programme and venture capital*

Over the past years, Israel has emerged as a high-tech power and one of the leading exporters of technology-intensive products. The Israeli government has played a key role in this process by efficiently supporting the development of the ICT sector in the country, building on the country's excellent human capital potential. The government's interventions are remarkable. They have maintained a market-friendly spirit with neutrality towards the private sector as the guiding principle, aiming at remedying market failures inherent in innovation. Israel's incubator programme is an example of such an initiative.

Thanks to its high level of R&D in research institutes and universities and abundant human capital resulting from immigration, Israel[1] has always been strong in the generation of ideas. However, these ideas often remained at the conceptual stage and were not turned into products. The market failure in the country has resulted mainly from the absence of financing and business services, as many researchers lacked experience as entrepreneurs.

Although the programme is open to all, it was initially targeted at the many scientists and engineers immigrating from the former Soviet Union. Many of these scientists and engineers had remarkable research potential, but lacked experience with developing commercially viable products, knowledge of English and Hebrew, access to financing and experience with protecting intellectual property rights, among other things. From the very beginning the approach aimed at taking selected entrepreneurs through the entire programme, from developing the first idea to the point where they can stand on their own.

The incubators not only provide financial assistance, but also a wide range of business services specific to entrepreneurs, such as help with further developing the product or service technology, setting up a viable business model, filing patents, market studies, attracting customers, as well as helping to set up a competent management team, among other things.

With a budget of US$ 30 million, a total of 24 incubators have been set up in the country, each in charge of about 10 projects with an average duration of about two years. The average budget is about US$ 450,000 per project per year. At the beginning of the project, the public sector provided the main source of funding, about 85%, either through soft loans or grants. The remaining resources are to be generated either by the entrepreneur, the incubator or venture capital firms. This has a number of advantages, the main one being that the outside investor checks the viability of the project.

Over time, the share of private investment in the incubator programme has increased considerably faster than the share of public investment and after 10 years of operation, about 13 incubators have been privatized, taking advantage of the increased influx of venture capital into the country. Currently, the programme continues to be closely monitored to ensure excellence and highest quality standards. The incubator programme became the foremost generator of start up companies in Israel. The success rate is about 50% of all incubator start ups that are able to generate private funding to operate for at least two years, compared to a track record of just 10% in the United States. Consequently, today, Israel has the world's highest density of high tech start ups, about 2,500 in a country of only 6 million people.

The second key element of Israel's success in ICT was the government's support to create a market-friendly venture capital industry to address the financing gap entrepreneurs face in the first phase of activity. In the early 1990s, the lack of proper financing was one of the most important problems facing entrepreneurs. In 1992, the Yozma programme was established to trigger the creation of venture capital in the country. The government provided US$ 100 million to encourage international venture capital to enter Israel, invest in local firms and nurture local talent. The government's investment was matched by international venture capital and industry firms, which established 10 funds. The involvement of internationally reputable firms allowed the country to attract the much-needed expertise in addition to the funds so as to build up a strong local venture capital industry. Yozma was created for a fixed duration and was privatized after seven years. The success of the programme speaks for itself. In 2000, Israel raised US$ 600 per capita in venture capital compared to US$ 30 in Europe, and Israel has today the highest share of domestic venture capital in GDP worldwide. Between 1995 and 2004, venture capital investments contributed to a 40% increase in GDP and 15% increase in employment and accounted for 50% of exports and 65% of foreign investment.

Thanks to its targeted and market-friendly innovation promotion programme, Israel became the world leader in security technologies and chip design, and continues to attract investments in communications and networking as well as software.

* Based on Lopez-Claros and Mia, 2005.

[1] Immigration included immigration from the former Soviet Union, but alsoresearchers who returned to Israel in response to incentives set up by the government.

fairly low enrolment rates call for a stricter enforcement of schemes for compulsory primary schooling. Health indicators point to worrying levels of tuberculosis and HIV, which translate into high costs for business.

Higher education and training are among Ukraine's competitive advantages (ranked 53rd) and the country should continue efforts to maintain this high level. Secondary as well as tertiary enrolment remain fairly high. The quality of education is mixed, depending on the field of study. While management schools do not meet the needs of business, the overall quality of the educational system as well as the math and science education are fairly well assessed.

The efficiency of the goods market is among the pillars that receive the lowest marks (101st). Competition, both domestic and foreign, remains below levels necessary to achieve efficient markets. In particular, burdensome taxation as well as barriers to new firm creation and entry of foreign firms and products limit the benefits of a competitive environment.

The country has relatively efficient labor markets, ranking at 65th position overall. Although flexibility in employment relations remains low, talent is used fairly efficiently, in particular because of the high level of female participation in the workforce and the close link between pay and productivity. Lower non-wage labor costs and more professionals in management positions would further increase Ukraine's competitiveness in this particular area.

In terms of financial market sophistication, Ukraine ranks 85th overall. Stability of the banking system is an area where improvements are needed, as is the regulation of securities exchanges, and the restrictions on capital flows. Stronger protection of investors would also contribute to more efficient financial markets.

Technological readiness remains an area where more targeted policies will be needed in future to improve Ukraine's competitive position. The fairly low ranking of 93 reflects companies' limited absorption of technologies from abroad, as well as restricted availability of the latest technologies. In this context, FDI could be used more intensely for technology transfer. The infrastructure for ICT is assessed at higher levels than the absorptive capacity.

Market size is one of the undeniable advantages of Ukraine's economy (rank 26). In addition to the large local market, the country's exports are fairly high in international comparison, mainly going to the two direct neighbors, the European Union and the CIS.

Ukrainian businesses could employ more sophisticated business practices in their day-to-day dealings (81st on business sophistication), yet this area of competitiveness is not yet of the utmost importance for Ukraine, given its fairly basic stage of development. Areas of competitive advantage include the high quantity of local suppliers as well as sophisticated production processes and extensive control of international distribution.

Despite its basic stage of development, Ukraine's innovative capacity is noteworthy and ranked at 65th. More stringent protection of intellectual property rights would significantly improve this capacity and enable the country to benefit from the high quality of research institutes and the relatively intense collaboration between research institutes and companies.

Overall, the analysis shows that further and faster-paced reforms will be needed for Ukraine to fully realize its competitive potential. Given the country's relatively basic stage of development, it should focus first on improving the pillars of competitiveness that enter the basic requirements subindex: institutions, infrastructure, macroeconomic stability, and health and basic education. Addressing the challenges among these areas will enable the country to enhance its competitiveness and move up the development ladder faster. As Ukraine is currently already moving towards the next stage of development, strengthening the efficiency enhancers – goods, labor and financial markets efficiency, technological readiness and market size – is equally important to prepare for the future.

Notes

1 See for example Rodrik et al. (2002), and, most recently, Kaufmann et al. 2007

2 Montenegro and Puerto Rico, for which PPP estimates are not available, are excluded from the comparison. Luxembourg whose GDP per capita of 87,000 international dollars (IMF 2007d) makes it an outlier is also excluded.

3 Because some incumbent countries are progressing faster and new countries are entering the ranking at a higher level, Ukraine has not been able to maintain its position, despite an improvement in its score. The same occurs for many components and variables of this pillar.

4 The median rank is the rank of the country in the middle of the set of countries. That is, half of the countries rank higher than the median rank, half rank lower.

5 See Correa 2007 for more details.

6 Baker & McKenzie 2007

7 In the Executive Opinion Survey, the question reads as follows: "In your country, diversion of public funds to companies, individuals, or groups due to corruption: 1 = is common, 7 = never occurs"

8 World Bank 2005.

9 World Bank 2007b

10 OECD 2007

11 Sigma 2006

12 The survey question goes as follows. "The legal framework in your country for private businesses to settle disputes and challenge the legality of government actions and/or regulations is: 1 = is inefficient and subject to manipulation; 7 = is efficient and follows a clear, neutral process."

13 Noel et al. 2006

14 EBRD 2006

15 As commented by experts and observers, the drop in rank of air transport infrastructure is partly due to the situation around the plans of construction of the new air terminal in Kyiv that were not realized in 2007, thus failing to deliver on the public expectations.

16 Press Release, Municipal Airport "Kyiv" Zhulyany, August 2008, http://www.airport.kiev.ua

17 Press Releases, NJSC Naftogaz of Ukraine, 2007, www.naftogaz.com

18 Press Release, Gazprom, July 2005, www.gazprom.ru

19 Infrastructure Monitoring for Ukraine, N 8/2006. Institute for Economic Reform and Policy Consulting, Kyiv, 2006

20 World Bank 2007c.

21 Given Ukraine's stage of development, the score achieved in the 4th pillar accounts for 14% of the overall GCI score.

22 A similar observation is made by UNDP 2006a.

23 For a discussion about demographic trends, see Section 3.4.

24 The business community, through the Forum's Executive Opinion Survey, is voicing its discontent about tax regulations and tax rates, both rated among the top five most problematic factors for doing business in Ukraine, together with policy and government instability, and corruption. See Chapter 2 in this report.

25 For further discussion, see Section 3.6.

26 On December 27th, 2007, President Yushchenko declared: "[W]e should lift moratorium on land sale in 2009 and in the first half of 2008 we should eliminate all obstacles toward this end". Source: The National Radio Company of Ukraine. December 27, 2007

27 Between 1999 and 2008, Ukraine's GDP has grown 400% to UAH 538 billion. Public debt has been essentially stable around 80 billion. As all USSR debt was inherited by Russia, Ukraine did not have any debt at independence.

28 See IMF 2007b

29 Many rich countries have embarked on a dangerous path. Despite strong global growth, governments are running deficits and public debt is piling up. This raises serious concerns as to their capacity to assume the liabilities created by aging demographics, a problem already facing Ukraine.

30 For the sake of readability, inflation rates prior to 1998 are not reported in Diagram C. Back in 1993, the earliest year available, inflation rate was exceeding 4,700%.

31 For the sake of readability, the lending rate prior to 2001 is not reported in the diagram. The interest rate spread between foreign-currency denominated deposits and loans is not available prior to 1998

32 Data provided by the National Bank of Ukraine in December 2007.

33 For further details on this issue, see OECD 2007and IMF 2007b

34 The exchange rate criterion is based on the Exchange Rate Mechanism (ERM) under which the exchange rate is allowed to float within a band of plus or minus 15% around an assigned value against the Euro (the so-called fluctuations margins). The reference values for inflation and interest rate are revaluated on a yearly basis based upon the performance of Euro Area members. The values used here come from ECB (2007)

35 See note 2.

36 A median rank of 91 means that half of CIS members rank below 90.

37 UNDP 2006a.

38 In the GCR 2007-2008, due to limited availability, 2004 data was used for life expectancy. In Ukraine, it was 67 years. In 2005, it was one year longer (see Figure 3.4.4).

39 The Constitution of Ukraine of 28 June 1996 states: "[E]veryone has the right to health protection, medical care and medical insurance. Health protection is ensured through state funding of the relevant socio-economic, medical and sanitary, health improvement and prophylactic programmes. [...] State and communal health protection institutions provide medical care free of charge; the existing network of such institutions shall not be reduced."

40 World Bank 2007a. Averages for regions are non-weighted.

41 The replacement rate is the fertility rate which ensures population replacement. A rate of 2.1 is the commonly accepted value for industrialised countries. Yet, due to higher child mortality, it is estimated to be as high as 3.3 for certain developing countries.

42 Projections by the United Nations Population Division (2007a) predict that Ukraine's population will continue to decrease at a rate of about 1% per year to reach 42 million by 2020 and 31 million by 2050. This is the "medium variant". The high and low variants forecast a population of 37 and 26 million by 2050, respectively.

43 Defined as 65 and above.

44 The latest figures provided by the State Statistics Committee of Ukraine show that in 2006 immigrants to Ukraine actually outnumbered emigrants by a tiny margin of 14,245 people, or 0.3 per 1,000 population.

45 Usually the lengthening of life expectancy goes together with a falling fertility rate, allowing for an extended retirement age, thereby compensating for the shortage of young workers. This is not happening in Ukraine.

46 UNDP 2007.

47 The net enrolment ratio in primary education is the ratio of the number of children aged 5 to 12 attending school to the total population of children aged 5 to 12. All education figures in this section are from UNESCO 2007 unless specified otherwise.

48 The Survey question is worded as follows: "The primary schools in your country are: 1 = of poor quality, 7 = equal to the best in the world."

49 Although extremely revealing, the data availability of the indicators included in the EDI makes it impossible to include them in the GCI. The EDI covers a large sample of 125 countries, but the country selection is very different from that of the GCI.

50 In descriptive statistics, a decile is any of the nine values that divide the sorted data into 10 equal parts, so that each part represents one tenth of the sample or population.

51 The indicator used in the GCI excludes capital investment. On the broader measure of total public spending on education, Ukraine allocates 6.3% of GDP to education against 5.3% on average in OECD countries. Due to limited data availability, this latter measure cannot be included in the GCI.

52 State Statistical Committee of Ukraine 2006

53 See note 2

54 The Survey question reads as follows: "Internet access in schools is: 1 = very limited, 7 = extensive – most children have frequent access."

55 The example of China is particularly poignant. Boosted by two-digit growth, wages in coastal China have grown so much over the past decade, that basic industries, such as textiles and clothing, are now relocating inland. Shanghai, as a city, is moving up the value chain rapidly creating new needs in terms of human capital.

56 WTO, ITC and UNCTAD 2007.

57 OECD 2007 has similar findings.

58 See OECD 2007, p. 120, for examples.

59 In many transition economies, the small and medium sized enterprises created since the onset of transition to a market economy ensure a highly competitive environment. They have been the main engine for growth in many countries, ensuring significant increases in labor productivity and efficiency.

60 EBRD 2007.

61 Ukraine's score on the EBRD index of enterprise reform is 2.0 on a scale from 1 (socialist economy) to 4.5 (market economy). See EBRD 2007.

62 OECD 2007, p. 116.

63 OECD 2007, p. 100ff. This source also outlines in more detail the difficulties in measuring the small business sector in Ukraine.

64 Russia, Kazakhstan and Georgia all require only seven procedures.

65 In particular, the permit system still remains a major impediment to business creation. For more information, see UNDP 2006a.

66 OECD 2007, p. 32.

67 UNDP 2006a, p. 50.

68 World Bank 2007b.

69 See Chapter 2 for a discussion of the results on the most Problematic Factors for doing business.

70 However, it has to be noted that the results for the years 2006-2007 and 2007-2008 on this pillar are not fully comparable, as two variables were added to the index in 2007 that were not available in 2006. These two Survey variables, "Restriction on capital flows" and "Regulation of securities exchanges" obtain very poor assessments in 2007. They therefore significantly contribute to lowering the result in 2007.

71 IMF 2007c.

72 IMF 2007c.

73 See Noel et al. 2006.

74 See IMF 2007b and IMF 2007c.

75 The results on this sub-pillar for 2006 are not fully comparable as the variable "Regulation of securities exchanges" was missing.

76 IMF 2007c.

77 See IMF 2007b for more detail.

78 This variable enters the GCI under the innovation pillar.

79 The source for tariff data is WTO, ITC and UNCTAD 2007.

80 See Chapter 1 for an explanation of the notion of stage of development.

81 This figure was constructed by grouping countries into five groups (three stages of development and two transitions) and then, for each group, by calculating averages across the countries. For each stage, the median rank is the rank of the country placed in the middle of the set of countries. Ukraine and Germany are represented for the sake of comparison.

82 The Executive Opinion Survey question is: "Local suppliers in your country are: 1 = largely nonexistent, 7 = numerous and include the most important materials, components, equipment, and services."

83 The question reads: "The quality of local suppliers in your country is:
1 = poor, as they are inefficient and have little technological capability,
7 = very good, as they are internationally competitive and assist in new product and process development."

84 The Executive Opinion Survey question is: "Strong and deep clusters are widespread throughout the economy: 1 = strongly disagree,
7 = strongly agree."

85 For example, shoe manufacturers within a cluster require sufficient and reliable supply of leather and a skilled workforce, as well as an efficient network of ground transportation.

86 At the pillar level, 11 stage 1 countries are ahead of Ukraine.

87 See Section 3.7.

88 The question is: "Willingness to delegate authority to subordinates is:
1 = low – top management controls all important decisions,
7 = high – authority is mostly delegated to business unit heads and other lower-level managers."

89 Witness the recent boom in micro-credit as a form of development aid.

90 See http://www.ukrstat.gov.ua/

91 See World Bank 2007a.

92 State Statistics Committee of Ukraine 2007.

93 All data for 2004, Eurostat.

94 The absolute number has fallen by about 20%, from 120,000 in 2000 to about 100,000 in 2006.

95 State Statistics Committee of Ukraine 2007.

96 State Statistics Committee of Ukraine 2007.

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CHAPTER 4

Competitiveness of Ukraine's Regions

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Given the economic and cultural diversity of Ukraine, an analysis of the country's competitiveness cannot be complete without comparing the performance across regions. In cultural and economic terms, Ukraine is divided between the ethnically predominantly Russian industrialized east, and the mostly Ukrainian rather rural western regions. In political terms, although the independence movement was initiated in the western part of the country, Ukraine's more densely populated eastern regions have had greater influence on the political debate since then.[1]

Ukraine experienced a severe economic recession related to the country's economic and political transformation in the 1990s and the regions were affected differently by this situation, given their different economic structures. The Dnipropetrovsk and Zaporizhya oblasts[2] in the east have fared relatively well economically over this time period, as Soviet industries, mainly in the steel and chemicals sectors, continued to export to CIS and other neighboring countries. So far, however, these industries have not been restructured. Instead, they benefit from a preferred status as strategic industries, which has implied numerous tax exemptions and, until recently, inexpensive energy supplies. Foreign investments have contributed to Kyiv's burgeoning growth. The coal producing regions, in particular Donetsk and Luhansk, were seriously hit by Ukraine's economic transformation because by international standards the mines were fairly inefficient and previously heavily subsidized and protected. As a result, the mines had to be closed.

The quality of local government has, among other factors, greatly influenced the regions' economic performance. Politically left-wing Crimea, for example, whose tourist revenues could have made it one of Ukraine's wealthiest regions, remains underdeveloped. Odessa, which has no manufacturing base, fared relatively better at the beginning of the decade under pro-market municipal leadership. Currently, in response to rising prices for agricultural products, business activity and investment in the agricultural regions are picking up. This could reduce economic divergence between the rural and more industrialized regions.

The degree of economic divergence between Ukrainian regions is moderate compared to other countries. The main indicators are presented in Table 4.1, which shows key measures of gross regional product (GRP) for all of Ukraine's 27 administrative units. Notably, the income of the wealthiest (Donetsk) is 33% higher than Ukraine's average, while that of the lowest (Chernivtsi) amounts to less than half the average. The GRP per capita of the city of Kyiv is more than three times Ukraine's average. These disparities are more or less in line with those found in neighboring Poland, where the wealthiest region's GRP is 58% higher than the national average and that of the lowest, only 69%.[3] Yet, the regions are very different in terms of economic dynamism. While the slowest growing region registered a negative growth

Table 4.1 Regional disparities in Ukraine

	Gross regional/domestic product, 2005		
	per capita (UAH)	per capita (index value, Ukraine = 100)	real growth (%)
Ukraine	**9,372**	**-**	**2.7**
Oblasts			
Vinnytsya*	5,966	63.7	5.3
Volyn	6,285	67.1	3.7
Dnipropetrovsk*	11,909	127.1	7.3
Donetsk*	12,490	133.3	-2.9
Zhytomyr	5,554	59.3	1.1
Zakarpattya*	5,373	57.3	-1.5
Zaporizhya	10,683	114.0	4.6
Ivano-Frankivsk	6,916	73.8	5.9
Kyiv	8,673	92.5	7.3
Kirovohrad	6,394	68.2	2.4
Luhansk	8,131	86.8	0.3
Lviv*	6,657	71.0	-1.9
Mykolayiv	7,801	83.2	0.1
Odesa	8,619	92.0	-0.4
Poltava*	11,574	123.5	-0.8
Rivne	6,269	66.9	2.1
Sumy*	6,497	69.3	4.4
Ternopil	4,603	49.1	2.5
Kharkiv	9,025	96.3	4.8
Kherson*	5,713	61.0	-0.8
Khmelnytsky*	5,764	61.5	3.9
Cherkasy*	6,681	71.3	7.0
Chernivtsi	4,654	49.7	1.5
Chernihiv	6,474	69.1	0.1
Cities			
Kyiv*	28,780	307.1	5.8
Sevastopol	7,452	79.5	0.9
Autonomous Republic of Crimea*	6,460	68.9	4.0

Source: State Statistics Committee of Ukraine 2007; National Bank of Ukraine * Indicates the region is featured in this report

rate of 2.9% (Donetsk) in 2005, the most dynamic oblasts grew at more than 7% (Kyiv and Dnipropetrovsk).[4] Figure 4.1 shows the contribution of each region covered by this report to Ukraine's gross domestic product (GDP).

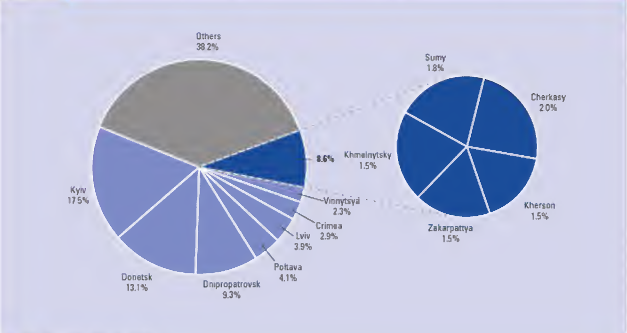
4.1 Methodology

Many factors, institutions and policies that influence national competitiveness are under the realm of regional or local authorities. The efficiency of local administration, maintenance of infrastructure, education, and technological readiness are just a few examples where regional governments can make a significant difference in most countries. In addition, over the past years, increasing fiscal and administrative decentralization, in particular in EU countries, has put regions and cities higher on the agenda of economic policymaking. As a result, there has been an increasing interest in work related to assessing the competitiveness of regions and cities.

It is in this context that the World Economic Forum is carrying out the present analysis of the competitiveness of Ukrainian regions using the methodology of the Global Competitiveness Index. In 2006, the Executive Opinion Survey, which is the basis for calculating the Global Competitiveness Index (see Chapter 1) was carried out in 12 of the 27 Ukrainian regions: Dnipropetrovsk, Zakarpattya, Lviv, Sumy, Khmelnytsky, Donetsk, Poltava, Vinnytsya, Kherson and Cherkasy, as well as in the Autonomous Republic of Crimea and the city of Kyiv. This representative selection includes oblasts from different geographic parts of the country as well as regions with diverse economic structures and cultural backgrounds. In this way, it can provide a sense of the differences across the country with respect to competitiveness.

In each of the regions, approximately 50 surveys were completed by business executives. The survey questions were those asked at the national level, which enables comparisons of each region's competitiveness with the Ukrainian average as well as with other countries included in the GCR sample. This allows for a nuanced analysis. However, one caveat must be kept in mind when interpreting the data. As described in Chapter 1, the survey asks the business leaders to assess the situation at the national level and not at the regional level. This report uses the data in this regional analysis under the assumption that business

Figure 4.1 Breakdown of Ukraine's gross domestic product (GDP) by administrative unit, 2005



Source: State Statistics Committee of Ukraine 2007

leaders will assess the business environment based on their experience in the region they operate in, which is reflected in the very different scores obtained by the regions. However, it is likely that differences between the regions are understated, given the general focus on the national business environment. Using the regional survey results as well as regional hard data when available, we apply the GCI methodology and calculate the Index in the same way as described in Chapter 1.

For seven hard data indicators, regional data was used: inflation, interest rate spread, main telephone lines, tuberculosis incidence, infant mortality, primary education enrolment rate and personal computers. National level hard data was used otherwise, either due to lack of regional level data (for example the World Bank's Doing Business indicators), the different data definitions at regional and national levels (such as secondary and tertiary education enrolment rates), or because certain indicators aim to measure policies decided at the national level (for example trade weighted tariff rates), in which case we deliberately use national figures. For this reason, we do not report the results for the 10th pillar (market size) in this chapter, although it is included in the calculation of the GCI. As policies related to this pillar are solely in the purview of the central government, the pillar cannot constitute a differentiating factor of competitiveness among Ukraine's regions.

As the survey data was collected in 2006, we used the corresponding hard data indicators for 2005 or the latest year available. As a result, the figures quoted for the Ukraine average differ from the data reported in other parts of this report. Equally, the results are compared to the results of the GCI 2006–2007, which covered 122 economies. Therefore, a total of 134 economies are included in this analysis (122 countries and the 12 Ukrainian regions). For the sake of benchmarking each region against the Ukrainian average, we also report the Ukraine average in this sample. The entire sample of countries and regions is shown in Table 4.2. The Regional Competitiveness Profiles at the end of this report complement this chapter, showing the detailed results down to the variable level for each region.

4.2 Competitive performance of Ukrainian regions

Figure 4.2 shows the performance of Ukraine's 12 selected regions in the GCI and Table 4.2 shows the performance of these regions in international comparison.

The city of Kyiv leads the way as the most competitive among the regions assessed, achieving a score of 4.25, almost 5% above the Ukrainian average. With its ranking of 53 among the 134 economies, Kyiv comes in right after Croatia.

Dnipropetrovsk follows closely behind the capital city at 54th rank with an only slightly lower score of 4.24. Zakarpattya, ranked third, and 57th in the overall sample, comes in between Kazakhstan and El Salvador. Dnipropetrovsk positions itself 54th, right ahead of Cyprus.

Further down the rankings, we find Lviv at 4th place with a much lower score of 4.14. In the overall sample, Lviv ranks 63rd, behind Russia and ahead of Jamaica. Lviv is followed by Khmelnytsky at 69th rank before Brazil and Azerbaijan. Sumy and Donetsk are comparable to the Ukrainian average in terms of their competitiveness, obtaining a score of 4.07, and rank 73 and 74, right behind Vietnam.

Table 4.2 Competitiveness of Ukraine's regions in international comparison

Rank	Country/Economy/Region	Score	Rank	Country/Economy/Region	Score	Rank	Country/Economy/Region	Score
1	United States	5.73	46	Poland	4.35	**91**	**Kherson**	**3.90**
2	Switzerland	5.63	47	Bahrain	4.35	92	Bosnia and Herzegovina	3.86
3	United Kingdom	5.59	48	Malta	4.31	**93**	**Cherkasy**	**3.85**
4	Denmark	5.55	49	Jordan	4.31	94	Armenia	3.82
5	Japan	5.55	50	Mexico	4.29	95	Sri Lanka	3.81
6	Finland	5.54	51	Indonesia	4.27	96	Macedonia, FYR	3.80
7	Germany	5.53	52	Croatia	4.25	97	Pakistan	3.79
8	Sweden	5.52	**53**	**Kyiv**	**4.25**	98	Georgia	3.76
9	Singapore	5.44	**54**	**Dnipropetrovsk**	**4.24**	99	Honduras	3.75
10	Netherlands	5.42	55	Cyprus	4.23	100	Dominican Republic	3.75
11	Hong Kong SAR	5.41	56	Kazakhstan	4.23	101	Mongolia	3.74
12	Canada	5.35	**57**	**Zakarpattya**	**4.22**	102	Venezuela	3.73
13	Taiwan, China	5.31	58	El Salvador	4.20	103	Moldova	3.73
14	Israel	5.31	59	Panama	4.20	104	Ecuador	3.67
15	Norway	5.22	60	Mauritius	4.19	105	Bangladesh	3.66
16	France	5.18	61	Turkey	4.16	106	Kenya	3.64
17	Austria	5.16	62	Russian Federation	4.14	107	Nigeria	3.61
18	Australia	5.16	**63**	**Lviv**	**4.14**	108	Albania	3.58
19	Malaysia	5.15	64	Jamaica	4.14	109	Gambia, The	3.55
20	Iceland	5.14	65	Greece	4.13	110	Cambodia	3.53
21	Ireland	5.09	66	Colombia	4.11	111	Bolivia	3.53
22	Belgium	5.08	67	Morocco	4.11	112	Nicaragua	3.53
23	New Zealand	5.07	68	Costa Rica	4.10	113	Tajikistan	3.50
24	Korea	5.02	**69**	**Khmelnytsky**	**4.18**	114	Tanzania	3.50
25	Luxembourg	5.01	70	Brazil	4.10	115	Suriname	3.47
26	Chile	4.87	71	Azerbaijan	4.09	116	Cameroon	3.47
27	Estonia	4.85	72	Vietnam	4.08	117	Lesotho	3.47
28	Thailand	4.77	**73**	**Sumy**	**4.07**	118	Benin	3.43
29	Kuwait	4.69	**74**	**Donetsk**	**4.07**	119	Nepal	3.41
30	Spain	4.68	**75**	**Ukraine**	**4.07**	120	Paraguay	3.38
31	Czech Republic	4.67	76	Botswana	4.07	121	Madagascar	3.36
32	Qatar	4.67	77	Egypt	4.06	122	Uganda	3.35
33	United Arab Emirates	4.63	**78**	**Poltava**	**4.02**	123	Kyrgyz Republic	3.34
34	Tunisia	4.63	79	Philippines	4.02	124	Guyana	3.33
35	Slovak Republic	4.54	80	Romania	4.00	125	Mali	3.28
36	China	4.53	**81**	**Crimea**	**3.99**	126	Burkina Faso	3.27
37	South Africa	4.50	**82**	**Vinnytsya**	**3.98**	127	Zimbabwe	3.23
38	Latvia	4.50	83	Argentina	3.98	128	Mauritania	3.21
39	India	4.50	84	Trinidad and Tobago	3.97	129	Zambia	3.20
40	Portugal	4.49	85	Namibia	3.96	130	Ethiopia	3.18
41	Hungary	4.49	86	Guatemala	3.95	131	Mozambique	3.05
42	Slovenia	4.48	87	Algeria	3.94	132	Timor-Leste	2.98
43	Barbados	4.47	88	Peru	3.94	133	Chad	2.79
44	Lithuania	4.46	89	Bulgaria	3.93	134	Burundi	2.67
45	Italy	4.36	90	Uruguay	3.91			

Ukraine's regions are in blue bold type

In the second tier of regions, placing below Ukraine's average we find Poltava with a score slightly lower than the average (4.02). With this score, Poltava places 78th, ahead of the Philippines and Romania. Crimea and Vinnytsya rank 81st and 82nd respectively among the 134 economies assessed, below the Ukrainian average, but ahead of Argentina.

Kherson and Cherkasy close the regional rankings occupying positions 91 and 93, significantly below the national average. In particular Cherkasy, with a score of 3.85, occupies a very low position, comparable to Bosnia-Herzegovina, Armenia and Sri Lanka.

There is a spread of 40 positions between the best and the worst performing region, a seemingly fairly large difference in the level of competitiveness within one country, but the GCI scores paint a different picture. The scores of the best and worst performing regions are only 5% above or below the national average, respectively. This is significantly less than their divergence in terms of GRP per capita, which is in the order of 30% to 40%

Figure 4.2 The regions on the Global Competitiveness Index 2006

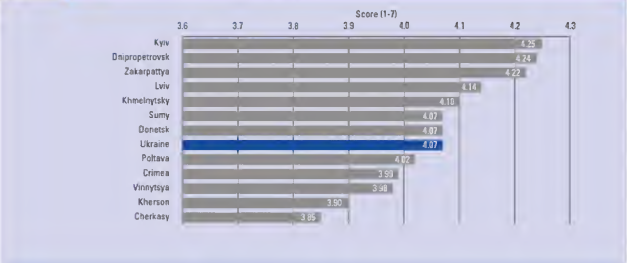
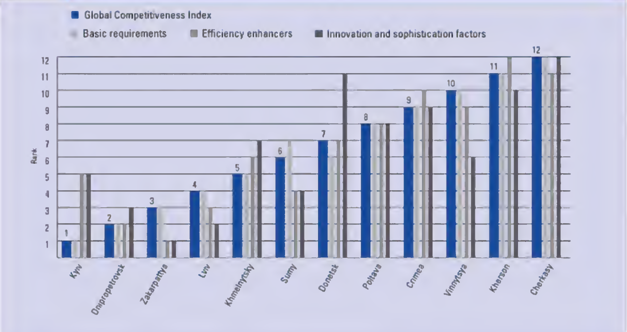


Figure 4.3 Regions' performance in the Global Competitiveness Index and the three subindexes



(excluding the city of Kyiv), as shown in Table 4.1. This much lower divergence perhaps reflects the underestimation of the differences due to the national level nature of much of the data used to compute the GCI.

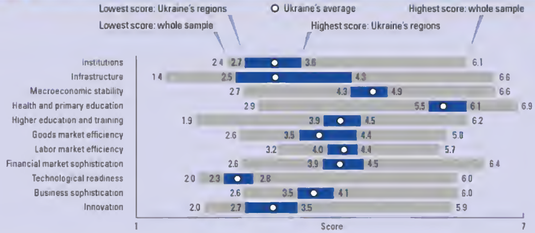
Figure 4.3 presents the performance of the regions in the three subindexes of the GCI, while Table 4.3 shows the best performing regions on each of the pillars. These results confirm the diversity in terms of economic structure. Kyiv, Zakarpattya and Dnipropetrovsk, the three best performing oblasts, all top at least two out of the 12 pillars. The two worst performing oblasts – Kherson and Cherkasy – are the weakest performers in three pillars each.

The performance on each of the pillars affects the overall result differently, and various pillars show different degrees of dispersion. The weights applied to each of the subindexes for the regions are the same as those for Ukraine, as we assume the same stage of development for the country as a whole.[7] Figure 4.4 compares the range of performance of Ukraine's regions in each pillar (blue shaded bars) with the whole sample (gray shaded bars). It shows the range of results for Ukraine on the different pillars and how they relate to the entire sample. The white dot in the middle of the bar represents Ukraine's average. As this figure shows for some pillars, the spread in performance between regions is fairly small, while in other pillars it is significant. This may reflect the degree to which this pillar falls within the realm of regional or local policy as opposed to national, the degree of policy coordination, or certain industrial, cultural or geographical differences.

Table 4.3 Ukraine's regions on the 12 pillars of competitiveness

	Kyiv	Dnipropetrovsk	Zakarpattya	Lviv	Khmelnytsky	Sumy	Donetsk	Poltava	Crimea	Vinnytsya	Kherson	Cherkasy
Global Competitiveness Index	1	2	3	4	5	6	7	8	9	10	11	12
Basic requirements												
1st pillar: Institutions	6	8	1	4	3	5	2	9	7	11	10	12
2nd pillar: Infrastructure	2	1	7	5	6	4	3	8	9	10	11	12
3rd pillar: Macroeconomic stability	2	12	4	1	6	11	8	5	9	10	3	7
4th pillar: Health and primary education	1	4	2	7	3	10	12	6	9	5	11	8
Efficiency enhancers												
5th pillar: Higher education and training	3	1	5	2	7	6	9	10	8	4	12	11
6th pillar: Goods market efficiency	11	2	1	5	4	10	3	6	8	7	12	9
7th pillar: Labor market efficiency	4	1	2	11	3	7	12	10	9	6	8	5
8th pillar: Financial market sophistication	6	4	2	5	7	1	3	11	12	9	8	10
9th pillar: Technological readiness	1	6	2	3	5	7	9	4	11	10	12	8
Business and innovation factors												
11th pillar: Business sophistication	8	5	1	3	7	2	12	4	6	9	11	10
12th pillar: Innovation	2	1	4	3	8	6	9	10	11	5	7	12
Count of top ranks (out of 12)	2	4	3	1	-	1	-	-	-	-	-	-
Count of last ranks (out of 12)	-	1	-	-	-	-	3	-	1	-	3	3

Figure 4.4 Score dispersion between best and worst performers



Among the regions the disparities are biggest in the infrastructure pillar (a difference of 1.8), while the contrast is the least marked in the labor market efficiency pillar (a difference of 0.4). Also worth noting is that the average performances of all the regions in the institutions, technological readiness and innovation pillars are disturbingly close to the worst performers within the entire sample on these pillars. However, Ukraine performs relatively well in health and primary education.

For the sake of the analysis Ukraine's regions selected in this study are divided into four groups: central and northern (Kyiv City, and Sumy, Poltava, Vinnytsya and Cherkasy oblasts), western (Lviv, Zakarpattya and Khmelnytsky oblasts), eastern (Dnipropetrovsk and Donetsk oblasts) and southern (Autonomous Republic of Crimea and Kherson oblasts).

4.3 The performance of central and northern regions

The centre of Ukraine's economy is focused around Kyiv, Ukraine's wealthiest consumer market. However, Poltava's gas and oil deposits are also increasingly attracting Western interest. With the European Bank for Reconstruction and Development's backing, some Western oil and gas operators are already active in the region, although bureaucratic obstacles remain in place. The region's economy is spurred by the high level of development of Kyiv city and Kyiv oblast. Investment indicators and standards of living are better in the north of Ukraine than in the center. The central and northern regions grouping includes Kyiv City, and Sumy, Poltava, Vinnytsya and Cherkasy oblasts.

Kyiv[6] Rank: 1

Highlights

- Kyiv's performance on the institutions pillar is cause for concern, but it does better on infrastructure and tops the national rankings in terms of health and primary education.
- The quality of higher education stands out as better than in the rest of the country, but the efficiency of goods and financial markets lags behind international and national standards.
- Kyiv tops the national ranking on technological readiness; innovation capacity is encouraging, but business sophistication remains behind expectations.
- Corruption, policy instability and tax regulations are the biggest impediments to doing business.

Among all of the regions, Kyiv is the biggest contributor to Ukraine's economy. At 77,124 million hryvnia (UAH), its gross regional product (GRP) amounts to some 18% of Ukraine's total GDP.[7] With a GRP per capita of UAH 28,780 – three times Ukraine's average – the city is by far the country's richest administrative region. With 2.8 million inhabitants, Kyiv is the country's fourth most populated administrative unit.[8] Kyiv's economic growth over the four-year period 2002-2005 amounted to 11.3% per annum on average.[9] The region has a diversified industrial base including aviation, shipbuilding, IT, chemicals and pharmaceuticals. Kyiv is both the political and administrative centre of Ukraine, but also its economic powerhouse.

Kyiv ranks first in the regional Global Competitiveness Index (GCI), preceding by a narrow margin the second ranked Dnipropetrovsk and Zakarpattya, ranked third. In the international ranking, Kyiv comes in 53rd, just behind Croatia. With a score of 4.25, it is in the same league as several EU accession countries, not too far behind Poland and Malta, and ahead of Cyprus. However, the gap remains wide with the strongest EU accession countries such as Estonia and the Czech Republic. Also noteworthy, Kyiv precedes CIS top performers Kazakhstan and Russia, as well as Turkey. Ukraine as a whole is ranked more than 20 places below its capital city. Given the large difference in per capita income between Kyiv and the rest of the country, as well as the high degree of centralization, the first rank should come as no surprise. Yet the prime spot earned by Kyiv in the regional and international rankings should not obscure the fact that several obstacles to enhanced competitiveness remain in many areas captured by the GCI.

Kyiv owes its top rank in Ukraine to its relatively good marks in the basic requirements component of the GCI, as shown in Figure 4.3. For Ukraine, a country at a basic stage of development, this subindex alone accounts for some 55% of the overall GCI score, due to the importance of more basic factors such as infrastructure and institutions for competitiveness at that stage. Kyiv does significantly less well in the other two subindexes.

In the basic requirements subindex, Kyiv is first among Ukraine's regions and 60th internationally. With its score of 4.5, the capital is well ahead of the rest of the country (see Figure 4.5), which averages 4.2 (excluding Kyiv). Particularly worrisome is the weak performance on the institutions pillar, compensated for by the good performance in the three other pillars of the subindex (infrastructure, macroeconomic stability, and health and primary education). The quality of institutions is crucial as well-functioning and transparent institutions are a precondition for the performance in many key areas of competitiveness captured in the subsequent pillars.[10]

A great many problems currently faced by Ukraine stem from the mediocrity of its public and private institutions and Kyiv is no exception. With a score of 3.2, it ranks 6th in Ukraine and 103rd overall, very much in line with Ukraine's average (3.1, 108th overall). Kyiv's poor performance is particularly worrisome because all central government bodies are located there. Lack of transparency and accountability as well as corruption tend to trickle down to regional institutions. The problems found in the capital are therefore likely to spread throughout the country. The diversion of public funds, corruption, and favoritism are common practices, which means there is little or no trust in politicians. As for private institutions, the business community itself admits that the code of conduct for businesses is among the world's worst, resulting in Kyiv's 131st place out of 134 in this indicator.

The situation is better in the other pillars of this subindex. Kyiv (3.6) is second only to distant leader Dnipropetrovsk (4.3) for the quality of its infrastructure (2nd pillar), well above Ukraine's average. Overall, it ranks 57th, on a par with Mexico, and ahead of Poland and Russia. The city boasts the highest penetration rate of telephone lines in Ukraine, and it ranks 26th overall and 3rd in Ukraine for the quality of railroads. Disappointing, though, are the bad marks it earns for the quality of road infrastructure (78th) and, of bigger concern, of air transportation at 101st – barely at the level of Nigeria.

The macroeconomic stability pillar is not a major differentiator of competitiveness levels between Ukraine's regions due to the centralized nature of policies in this area. Yet in the two indicators for which regional information exists, Kyiv posts results that are better than Ukraine's average. For example, inflation in the city reached 9.2% in 2006, which although high, is 2.4 percentage points less than the national figure and half the rate registered in Dnipropetrovsk at 19.8%. As for the interest rate spread, at 6.5 percentage points Kyiv's rate is one point less than the Ukrainian average.

In the last category of the subindex, the health and primary education pillar, Kyiv tops Ukraine and performs quite well in the international comparison. With a rank of 43, the city is only slightly behind Estonia and Hungary, and precedes Lithuania, as well as the Ukraine average. The city boasts the lowest infant mortality rate, the lowest tuberculosis incidence and the highest primary enrolment rate in Ukraine.

Figure 4.5 Kyiv's performance in the 12 pillars of competitiveness

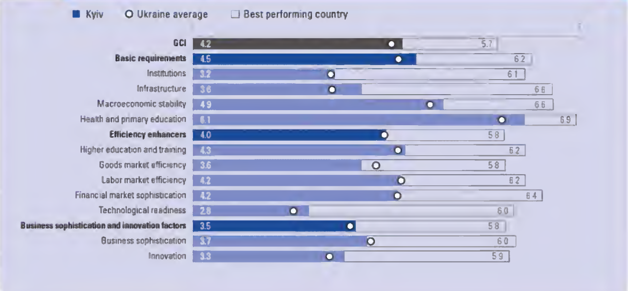
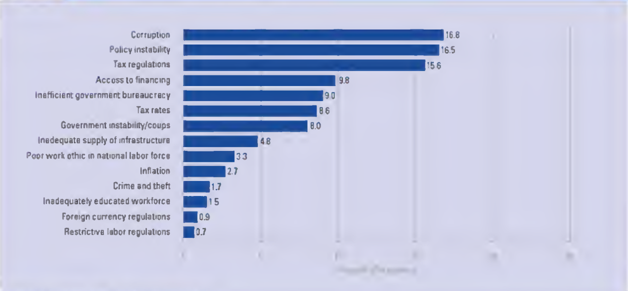


Figure 4.6 The most problematic factors for doing business in Kyiv



Source: World Economic Forum, Executive Opinion Survey 2008

Although Kyiv leads Ukraine in the basic requirements subindex, this is not the case for the efficiency enhancers subindex, even though differences are less marked. Kyiv appears in 5th position in this dimension of the GCI, with the same score as Ukraine's average (4.0) and not far from best performing Zakarpattya (4.2). It ranks 65th internationally, on a par with Croatia and Romania. Yet the fact that Kyiv is merely in line with the rest of Ukraine is unfortunate, because as Ukraine's unchallenged economic engine it should lead the way. It does so in the technological readiness pillar, but this represents a very poor performance by international standards (77th). In the other pillars of the subindex, Kyiv's performance is mixed, but seldom impressive by international standards. An exception is in the 5th pillar measuring the quantity and quality of higher education and training. Ranked third in Ukraine and 49th overall in this pillar, Kyiv does particularly well on the quality of the educational system with a 37th place globally. However, it remains significantly behind best-performing Dnipropetrovsk, which is ranked 22nd with a score of 6.0.

In the remaining three pillars of the subindex that look at the efficiency of goods, labor and financial markets, the capital does poorly by international standards, and is barely in line with average Ukrainian performance. With respect to the efficiency of the goods market (6th pillar), Kyiv ranks last but one in Ukraine and 108th overall. Certain branches of Kyiv's economy are dominated by a few business groups, which weakens the competition in the region (9th in Ukraine, 91st globally). In this context, the low score in terms of the effectiveness of anti-monopoly policies is particularly worrisome (10th in Ukraine, 113th overall). The labor market (7th pillar) is perceived as rigid, thereby hindering the efficient reallocation of human capital, particularly important in the context of rapid economic development. The severity of the brain drain from the city also stands out as a particular problem. With a score of 2.6, it ranks 98th – at the level of several African countries – on this indicator. Finally, although Kyiv is considered Ukraine's financial center, it ranks only 6th with respect to the overall sophistication of financial markets, which corresponds to a 67th position in the international ranking, on a par with Azerbaijan.

In the third subindex of the GCI measuring innovation and sophistication factors, Kyiv city comes in 5th. In the business sophistication pillar, the city posts a disappointing performance. With a score of 3.7 – hardly the national average – it ranks only in 8th position in Ukraine, and 84th overall, at the level of Kazakhstan. The situation is more encouraging in the innovation pillar. With a score of 3.3 and a rank of 53, Kyiv demonstrates a performance similar to that of Turkey. Among Ukraine's regions, it ranks second only to Dnipropetrovsk. A noticeable strength in this area is the impressive 31st rank – first in Ukraine – for the quality of research institutions.

When asked to name the most problematic factors for doing business in Kyiv (see Figure 4.6), business executives have highlighted pervasive corruption, unstable policies and burdensome tax regulation as the three most important issues. These issues are in line with the overall Ukrainian average. At the same time, business executives in Kyiv consider access to financing as more difficult than in Ukraine overall.

Sumy Rank: 6

Highlights

- Health and primary education indicators in Sumy are below the country's averages.
- The quality of institutions, the levels of infrastructure development, higher education and training, labor market efficiency, and innovation are all in line with the national assessment.
- Sumy scores higher than Ukraine's average on financial market and business sophistication indicators.
- Policy instability is the most problematic factor for doing business in the region.

The Sumy oblast is one of the most industrialized among Ukraine's center-north regions. Sumy's industrial production is dominated by minerals, accounting for 29% of total output, and manufacturing (65%), which mainly includes engineering and construction, food and agricultural products and the chemical and petrochemical industry.[11] A third of Ukraine's total hydrocarbon extraction and processing is clustered in the Sumy oblast. With the GRP per capita of UAH 6,497, the oblast contributes 1.8% to Ukrainian GDP, while accounting for 2.6% of Ukraine's population.[12] The growth rate in Sumy over the four-year period 2002-2005 amounted to 4% per annum.[13]

Out of the 12 regions included in the present study, Sumy ranks 6th. With a score of 4.07 and a rank of 73 among the 134 countries and regions, it outperforms by a significant margin countries such as Egypt, Romania and Argentina, and ranks just after Vietnam.

The business executives surveyed in Sumy assessed the financial markets as more sophisticated than those in Ukraine on average. The region ranks 44th of out of 134 countries and regions on the financial market sophistication pillar, above the Ukrainian average (see Figure 4.7) and at the level of Hungary, Slovenia and the United Arab Emirates. Sumy's financial markets ensure comparatively easy access to loans and venture capital, outperforming all other regions on these indicators. The score of 4.3 on ease of access to loans is comparable to that of Malta, and entrepreneurs with innovative but risky projects can generally find capital with the same ease as entrepreneurs in Belgium.

Over the past few years, access to financing has increasingly spread out into rural areas[14] to provide financing for the agricultural sector's business needs. Similar to its reasonable access to finance, banks in Sumy are viewed as more sound than in many parts of Ukraine, assessed at 4.8 as opposed to the national average of 4.5. With regard to business sophistication, the surveyed executives identified the spread and depth of clusters as a positive factor (35th rank), making Sumy the top performer in Ukraine, and comparable to Brazil on this indicator.

An analysis of the health situation and the quality and level of primary education shows that the oblast lags behind the rest of the nation on these areas. The assessment of business impact of tuberculosis and HIV/AIDS is worrisome, ranking 122nd (at the level of Botswana) and 102nd (at the level of Tajikistan), respectively. The other aspect where Sumy lags behind is the enrolment in primary education, comparable to the level of Lesotho (106th rank), which is partly due to a large share of population living in rural areas. The *Regional Trends Study* by the International Centre for Policy Studies, Kyiv, echoes concerns in the area of human development indicators, pointing out that the Sumy oblast has the highest rate of infant mortality among the rural areas.[15]

Overall, the levels of institutions, infrastructure development, higher education and training, labor market efficiency and innovation mirror the national conditions. However, there are a number of salient features within these pillars that are specific to Sumy. For example, within the institutions pillar, executives in the oblast complain less about favoritism in government officials' decisions than in other parts of Ukraine (47th rank globally, comparable to Jordan); and they also point to well-developed railroad infrastructure (30th rank).

Factors contributing to labor market efficiency include hiring and firing practices that are more flexible than in Ukraine on average. The capacity for innovation is underpinned by engineering and manufacturing clusters

Figure 4.7 Sumy's performance in the 12 pillars of competitiveness

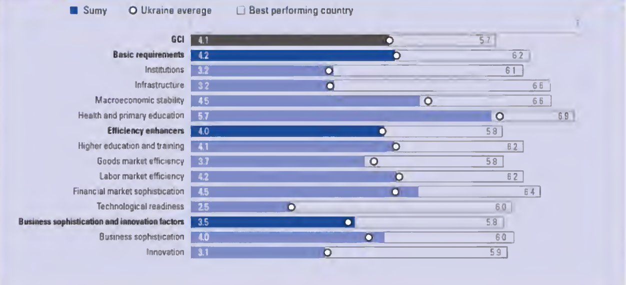
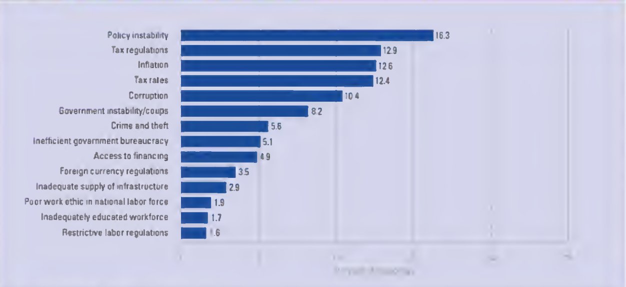


Figure 4.8 The most problematic factors for doing business in Sumy



Source: World Economic Forum, Executive Opinion Survey 2008

located in the oblast, which leads to good levels of university-industry research collaboration (51st rank globally).

When asked about the most problematic factors for doing business, executives pointed to policy instability as the most significant obstacle, followed by tax regulations and inflation, as shown in Figure 4.8. It is noteworthy that surveyed executives rate access to financing at only the 10th position, out of 15 identified challenges for doing business in the oblast, demonstrating that access to finance is less of a problem than in Ukraine on average, where it is considered the 7th most problematic factor.

Poltava Rank: 8

Highlights

- Poltava's labor market efficiency, goods market efficiency and quality of institutions follow the national pattern.
- The oblast lags behind the country's average in terms of infrastructure and financial market development.
- Poltava ranks higher than the national average on business sophistication, but lower on innovation.
- Access to finance is the most problematic factor for doing business.

Poltava's competitiveness ranks in the lower half of the regional ranking. In the global comparison, the oblast is ranked 78th in the GCI, just slightly ahead of the Philippines and Romania, and behind Brazil and Egypt. With a score of 4.02, Poltava's competitiveness is comparable to the overall Ukrainian average.

With GRP per capita of UAH 11,574, contributing 4.1% of Ukraine's GDP, Poltava experienced an annual GRP growth rate of 9.5% between 2002 and 2005.[16] The main sectors in this region include iron ore, the production and processing of oil and gas, engineering, footwear, and clothing. According to market assessments, one-third of Ukrainian crude oil is processed here.[17] The revenues from oil and gas exploration and processing of the local hydrocarbon deposits, as well as finance raised by the local light manufacturing industry, provide financial resources for diversifying the region's industrial base.

The comparative strengths of the Poltava region are clustered around macroeconomic stability and technological readiness on which the oblast outperforms the rest of the country by a narrow margin. The efficiency of Poltava's labor and goods markets, and the quality of education and health are comparable to the national averages, as shown in Figure 4.9.

Although the efficiency of the region's goods market is comparable to Ukraine on average, business leaders view regulations and laws on foreign direct investment (FDI) as more restrictive than in the rest of the country. In this respect, the local government is currently putting in place an FDI facilitation scheme, which should bolster the oblast's competitiveness in this area. In 2005, FDI flows into the region amounted to US$ 32 million, 22% of which came from the CIS.[18]

With respect to institutions, Poltava ranks 116th in the entire sample of 134 countries and regions, while Ukraine comes in 108th.

Poltava scored 3.8 on a 1 to 7 scale with respect to business sophistication, compared to the national average of 3.7. The well-developed clusters (42nd position comparable to South Africa) partly contribute to this ranking. Furthermore, local suppliers are numerous and of high quality.

Figure 4.9 Poltava's performance in the 12 pillars of competitiveness

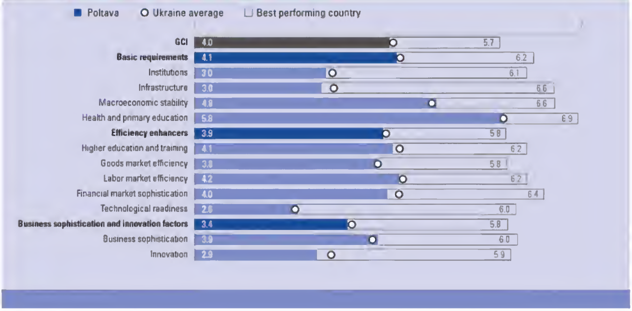
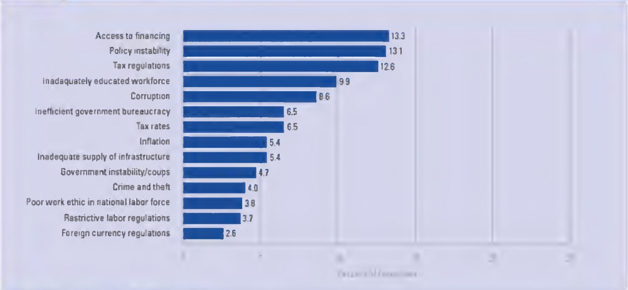


Figure 4.10 The most problematic factors for doing business in Poltava



Source: World Economic Forum, Executive Opinion Survey 2008

Poltava underperforms the national average with respect to innovation. The data suggest that products with a high content of innovation account for less than 1% of all production in the region[iv], which is confirmed by the low ranking of Poltava on the innovation pillar. Currently, Poltava ranks 96th in the innovation pillar, at the level of Panama. In particular, a lack of scientists and engineers and low levels of collaboration between industry and universities contribute to this result.

As shown in Figure 4.10, the major obstacles to doing business in Poltava have been identified as access to financing, policy instability and tax regulations. Whereas policy instability and tax regulations are among the country's problems for doing business, access to finance is singled out as the key issue in Poltava. At the same time, government instability and corruption are not perceived as hindering business activity to the same extent as in the rest of the country.

Vinnytsya Rank: 10

Highlights

- Infrastructure development in Vinnytsya as well as goods and financial markets efficiency are below national standards.
- Macroeconomic stability, health and primary education, and labor market efficiency follow the national pattern, as does higher education.
- Tax regulations are considered the most problematic factor for doing business by a wide margin.

With its 1.68 million inhabitants (3.6% of Ukraine's total population) and with its GRP per capita of 5,966 UAH (contributing about 2.3% to Ukraine's GDP), Vinnytsya is one of the poorer oblasts in Ukraine. Over the period 2002-2005, the region registered GRP growth of about 5.8% per annum.[v] The regional economy is structured around engineering and construction of electrical, photographic and medical equipment, agricultural products (mainly sugar beet processing), and consumer goods manufacturing. Gemstones processing and firearms manufacturing facilities are also located in Vinnytsya.

When benchmarked against the 12 regions, Vinnytsya comes in towards the lower end, at 10th. The score of 3.98 leads to a rank of 82 in the group of 134 countries and regions, just ahead of Argentina and Trinidad and Tobago, but below the rank of Ukraine as a whole.

Vinnytsya's institutions are assessed as being of a lower quality than the Ukrainian average (see Figure 4.11), ranking at 122nd, as opposed to 108th position for Ukraine. Particular weaknesses within the institutions pillar are the protection of intellectual property rights, as well as government inefficiency. With respect to the latter, the burden of government regulation receives a weaker assessment than the Ukrainian average, and government spending is considered more wasteful. Businesses in the region also believe that government is inclined to favor well-connected enterprises. Moreover, challenges within the judicial system persist, which is considered inefficient and prone to giving in to pressure from political or vested interests.

Infrastructure in the region is underdeveloped compared to the rest of the country, as reflected in the fairly low 84th rank as opposed to the national position of 76. Although the relatively better quality of railroads pushes the overall score upward, the quality of roads in Vinnytsya, already one of Ukraine's weaknesses, is below the country's average. Roads in Vinnytsya are comparable to those in Moldova, with a score of 1.5, while the Ukrainian average score is higher at 2.2. The telephone infrastructure is much less developed with only 18 lines per 100 inhabitants, somewhat below the national average of 26.

In terms of macroeconomic stability, and health and primary education, Vinnytsya's performance is in line with the national average. The business impact of tuberculosis is somewhat less of a problem, and there are no significant differences in the assessment of higher education and training.

Within the goods market efficiency pillar, the extent and effect of taxation is assessed less favorably in Vinnytsya than in Ukraine overall. This assessment is confirmed by the results of the survey question that asks the executives to name and rank the most problematic factors for doing business, as shown in Figure 4.12. Executives from Vinnytsya perceive tax regulations as a problematic factor more often (18.2% of responses) than Ukrainian executives on average (14.3% of responses).

Labor market efficiency is overall in line with the national average, with only a few differences. Brain drain is significantly more problematic in Vinnytsya, while pay and productivity are more closely linked. Hiring and firing practices are considered more rigid in Vinnytsya than in Ukraine on average.

Not surprising for a rather rural area, the sophistication of the financial market is assessed below the national average. It is more difficult for businesses to tap into the equity market for financing and it is equally difficult to obtain capital for risky projects and loans, where there is an over 20% difference in score compared to the Ukrainian average.

Vinnytsya lags behind the rest of the country in terms of technological readiness: firms are less inclined or able to adopt the latest technologies and technologies are less widely available. This assessment by business leaders is reinforced by the low score the region obtains in terms of PC penetration. The number of PCs per 100 inhabitants is more than five times lower than in the best performing region in the country, Kyiv. Business sophistication and innovation are well in line with the national average.

As regards the most problematic factors for doing business, as shown in Figure 4.12 policy instability and corruption are considered the most problematic factors,

Figure 4.11 Vinnytsya's performance in the 12 pillars of competitiveness

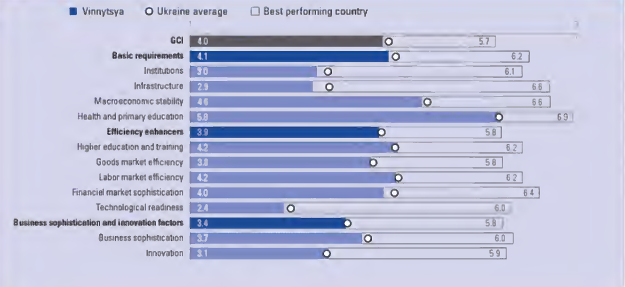
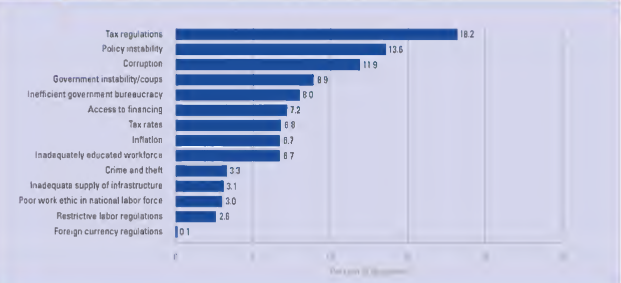


Figure 4.12 The most problematic factors for doing business in Vinnytsya



Source: World Economic Forum, Executive Opinion Survey 2008

following tax regulations. The inadequately educated workforce is considered a more serious problem in the region than in Ukraine on average, with 6.7% of responses mentioning this factor as problematic, against only 4.6% in Ukraine.

Cherkasy Rank: 12

Highlights

- Cherkasy is the weakest performer among the 12 regions on the overall GCI. The quality of institutions, the development of infrastructure and the level of innovation are the lowest among all assessed regions.
- The region's performance is below the country's average in all pillars but two, macroeconomic stability and labor market efficiency, which are in line with the country's average performance.
- Policy instability is the most problematic factor for doing business.

Cherkasy is a medium sized agricultural and industrial oblast that borders on four other central regions. With a GRP per capita of UAH 6,681, it accounts for 2.3% of Ukraine's GDP and 2.9% of its population.[4] Overall, 87% of total production volumes come from manufacturing,

Figure 4.13 Cherkasy's performance in the 12 pillars of competitiveness

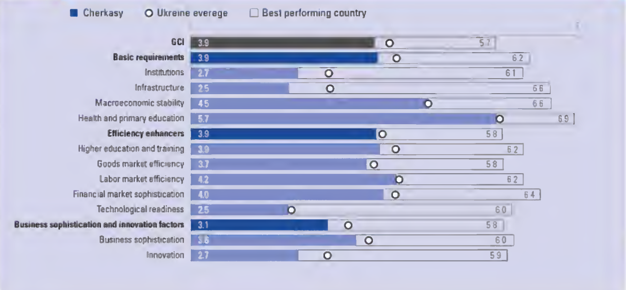
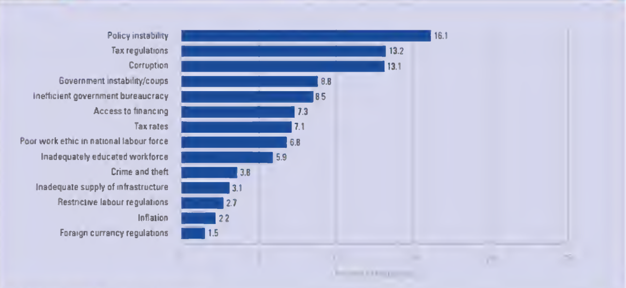


Figure 4.14 The most problematic factors for doing business in Cherkasy



Source: World Economic Forum, Executive Opinion Survey 2008

2.2% from mining (fuel peat and others), and 10.9% from the production and distribution of power and utilities.[22] Over the period 2002–2005, the oblast registered 5.8% growth per annum.

Out of the 12 oblasts and administrative territories selected to provide a snapshot of Ukraine's diversity, Cherkasy is the least competitive. Ranking 93rd it comes in just behind Bosnia and Herzegovina, and ahead of Armenia among the 134 countries and regions. Lower than average results on institutions, infrastructure, innovation, and business sophistication contribute to this generally poor competitiveness assessment (see Figure 4.13). On the remaining pillars, Cherkasy is either in line with the Ukrainian average (macroeconomic stability, health and primary education, labor market efficiency, technological readiness) or slightly behind the average (higher education and training, financial market sophistication). Thus, the oblast does not stand out positively on any of the 12 pillars of competitiveness.

Cherkasy ranks 131st in the global sample of 134 countries and regions for the quality of its institutions, with poor property rights protection (rated 2.9 on a scale of 1 to 7, comparable to the level of Argentina), and a particularly low rating for the efficiency of the legal framework, where it is ranked 131st globally with a score of 2.2, at the level of Chad. A recent dispute related to Cherkasygaz and the two strategic gas pipelines crossing the region, involving UrkTransService and investment companies, could have influenced the perspective of executives responding to the Executive Opinion Survey. In addition, complaints about the frequency and scale of the diversion of public funds (score 2.7, comparable to Mali) and a lack of public trust in politicians (score 1.3, comparable to Venezuela), are potentially linked – among other things – to the municipal council elections in mid-2006. However, despite the low rank (115th, at the level of Venezuela), the ethical behavior of firms when interacting with public officials, politicians and other enterprises in Cherkasy is better assessed than in Ukraine on average.

Cherkasy is ranked 12th and last in terms of the overall infrastructure quality, although the territory is crossed by a vast number of railways and motorways. The railroads running though the region connect the coast territories in the south with the north of Ukraine and Moscow, whereas the motorways link Donbas in the east with Zakarpattya in the west of the country. With a score of 2.6, the infrastructure quality is comparable to that of Indonesia. The score on the quality of roads is a low 1.6 versus the countrywide average of 2.2. For the quality of railroads, Cherkasy scores 3.3 on a scale of 1 to 7, corresponding to the level of Bulgaria.

Although tuberculosis incidence (81.5 per 100,000 of population) is quite high and comparable to that of Nicaragua (70th on this indicator), it is still lower than in Ukraine on average (86 cases per 100,000 of population).

With respect to higher education, the oblast occupies a low 98th place in terms of the quality of management schools, compared with a rank of 81 at the national level. The extent of staff training by private enterprises remains lower than the national average, scoring 2.6 on a scale of 1 to 7, comparable to Bulgaria, placing Cherkasy 121st globally on this indicator.

The assessment of the efficiency of labor markets (score 4.2) and goods markets (score 3.7) is similar to that of the average in Ukraine. The efficiency of the goods market is supported by the relatively high degree of customer orientation of local firms, which is mirrored by a high level of buyer sophistication in purchasing decisions. The labor market is characterized by some strengths, such as the high flexibility of wage determination, and flexible hiring and firing practices. However, professional management is scarce in this oblast, which ranks last in the country in terms of reliance on professional management as opposed to hiring friends and relatives.

Financial market efficiency, technological readiness, business sophistication and innovation are other areas that need to be further developed if the oblast is to become more competitive nationally and internationally. The control of international distribution by companies in Cherkasy receives a relatively high score of 4.2, an element of business sophistication that is comparable to Bahrain. Companies' capacity for innovation, which is higher than for the country on average is a factor on which Cherkasy can further build in developing its innovation potential.

As shown in Figure 4.14, according to the surveyed executives, policy instability, tax regulations and corruption are the three most problematic factors for doing business in Cherkasy.

4.4 The performance of eastern regions

The eastern regions group, which in this study includes the Dnipropetrovsk and Donetsk oblasts, boasts well-developed basic industry, producing steel as its leading export. The level of industrial development keeps unemployment in the region at a moderate level, whereas labor market efficiency is very uneven. Dnipropetrovsk, the oblast with the highest innovation capacity in the country, also has the most efficient labor market in Ukraine. The region's other important oblast, Donetsk – whose less diversified economy is mainly structured around extraction industries – has the country's least efficient labor market and business sophistication indicators. Some major steel plants were put up for sale, and the Donetsk coalmines have recovered from the social protests that impacted local economic development in the last decade. Consumer goods companies are entering markets in Ukraine's eastern industrial centers where wages are higher. Further, unfavorable ecological conditions have had a negative impact, leading to population attrition. This is reflected in Donetsk's poor public health assessment, the worst of all oblasts analysed.

Dnipropetrovsk — Rank: 2

Highlights

- Second only to Kyiv in the overall GCI, the region is a best performer in Ukraine on infrastructure development, higher education and training, labor markets efficiency and innovation.
- On the institutional assessment, government regulations are perceived as less of a burden in the oblast, but the unethical behavior of firms is a significant obstacle.
- Technological readiness is average, but low FDI levels hinder technology transfer.
- High control of international distribution contributes to business sophistication in the oblast.
- Policy instability remains the most problematic factor for doing business.

The Dnipropetrovsk oblast is one of the wealthiest and most industrialized regions in Ukraine. It is characterized by a well-developed basic industry, mainly in iron and steel production, but also in engineering and construction of electromechanical machines, as well as the automotive, chemicals and agricultural sectors. With its GRP per capita of UAH 11,909, it accounts for 9.3% of Ukrainian GDP, but only for 7.3% of the country's population.[23] In 2006, Dnipropetrovsk accounted for 18.6% of Ukraine's total exports and after Donetsk is the second largest exporter in Ukraine. With a growth rate of 7.5% per annum over the 2002-2005 period,[24] it also is the most dynamic region in the country.

Out of the 12 regions selected for the regional analysis, Dnipropetrovsk is the second most competitive. With a score of 4.2 on a scale of 1 to 7 its competitiveness is comparable with that of Croatia, which ranks 52nd in the enlarged GCI sample. It ranks significantly ahead of

Figure 4.15 Dnipropetrovsk's performance in the 12 pillars of competitiveness

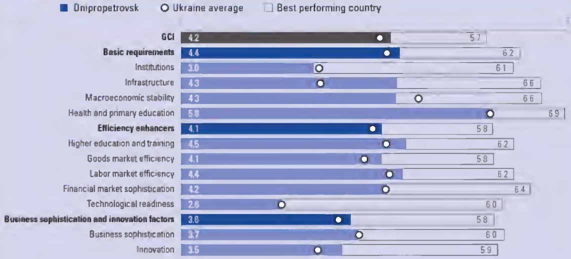
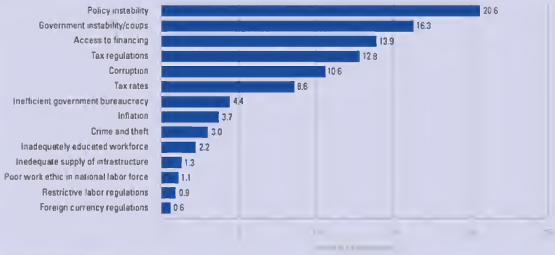


Figure 4.16 The most problematic factors for doing business in Dnipropetrovsk



Source: World Economic Forum, Executive Opinion Survey 2008

countries such as Russia, Turkey and Argentina. Highly developed infrastructure and available energy supplies due to its strategic location contribute to Dnipropetrovsk's competitiveness. Dnipropetrovsk tops national indicators on infrastructure development by a large margin, as well as for higher education and training, labor market efficiency and innovation. An overview of Dnipropetrovsk's performance is presented in Figure 4.15.

The overall assessment of institutions in the oblast is roughly in line with the national average. According to the surveyed CEOs, a relative competitive strength is the relatively low level of diversion of public funds, where the oblast comes in 4th nationally with a score of 3.6. Government regulations are not perceived as a significant burden as reflected in the fairly high 48th rank in the global sample, comparable to the Netherlands. In addition, auditing and accounting standards are perceived as higher in Dnipropetrovsk (score 4.2) than in Ukraine on average (score 3.7).

However, a number of major weaknesses related to the institutional environment were identified by the CEOs responding to the Executive Opinion Survey. Above all, the assessment of private institutions is significantly below the national levels. Executives judge the behavior of firms as highly unethical, positioning Dnipropetrovsk last among the 134 countries and regions assessed. Similarly, the protection of minority shareholders' interests is dismal, also ranking at the very bottom of the global sample of 134 countries and regions. Furthermore, the business environment is assessed as less secure than in Ukraine on average, in particular due to the fairly unreliable police services (10th rating nationally and 118th globally, comparable to Ecuador). Problems within the judicial system also persist. The legal framework is fairly inefficient for solving business disputes by national standards (9th ranking nationally and 118th globally, comparable to Peru). The judiciary is prone to influence by politicians and business, ranking 109th in the global sample, corresponding to the level of Honduras. One of the potential reasons for this assessment could be gleaned from the 2005-2006 discussions about reversing the 2003-2004 privatization of state enterprises, such as Kryvorizhstal Steel Mill, Dzerzhinsky Metkombinat, Nikopol Ferroalloy Mill, UkrRudProm.[11] Some analysts saw those discussions as politically motivated. At the same time restricted competition that led to lower-than-market selling prices provided the legal basis for scaling back privatization in some cases.

Thanks to the large heavy industry and transport clusters located in the oblast, Dnipropetrovsk ranks 36th on the infrastructure pillar in the overall sample of 134 countries and regions, ahead of the Czech Republic, Ireland and Italy; Ukraine's overall ranking is only 76, which is at the level of Brazil and Kazakhstan. Dnipropetrovsk is the national infrastructure champion across the board. It ranks first nationally on quality of roads (49th rank globally, level of Qatar) and railroads (13th rank globally, level of Taiwan), and air transport infrastructure (54th rank globally), as well as the quality of electricity supply (48th rank globally comparable to Lithuania). Dnipopetrovsk concedes the first place to Kyiv only on fixed telephone line connectivity, where it nevertheless occupies a fairly high 42nd rank in the full sample.

Dnipropetrovsk tops the national rating in terms of business impact of tuberculosis, where it takes the 43rd rank globally and also in terms of the business impact of HIV/AIDS taking the 1st rank nationally and 3rd rank internationally. With respect to the latter, it places at the level of Finland. Infant mortality in the oblast is more worrisome than the national average, where Dnipropetrovsk is ranked 9th out of the 12 oblasts and territories of Ukraine covered in this study and ranks 64th in the international comparison.

Thanks to a significant number of higher education institutions largely reflecting the specialization of the oblast on industrial engineering, energy and agriculture, the region ranks particularly high on the quality of math and science education and the quality of the educational system. On the quality of the educational system, Ukraine occupies the 50th place globally, while Dnipropetrovsk ranks a high 22nd, comparable to New Zealand.

The quality of science education undoubtedly contributes to international competitiveness of the local industry. At the same time, although many management schools recently established branches in Dnipropetrovsk, the quality of management education ranks a low 133rd with the score of 2.4 comparable to Mauritania, thus largely lagging behind the requirements of the market economy in terms of providing a pool of management skills.

With respect to goods market efficiency Dnipropetrovsk occupies the 2nd rank among the 12 regions covered in this study, and 66th rank in the overall sample. It stands out positively on the intensity of local competition (2nd rank nationally after Zakarpattya, comparable to Tunisia scoring 5.2) and buyer sophistication (similarly 2nd rank nationally after Zakarpattya, 33rd rank in the global sample, at the level of Slovenia). However, trade barriers are perceived as significant (127th rank in the global comparison, level of Mongolia) and have been assessed as heavier than in most of Ukraine's other oblasts (10th rank domestically).

Labor markets are slightly more efficient in Dnipropetrovsk than in other regions. Executives consider the level of cooperation in labor-employer relations in Dnipropetrovsk (2nd rating nationally, 50th globally, score 4.8 out of 7) and the flexibility of wage determination (5th rank nationally, 46th globally) as a significant competitive advantage. Similarly, the flexibility of hiring and firing practices (30th rank globally) is another international advantage, even though the oblast ranks below the national average on these two indicators. The strong correlation between pay and productivity (5th rank nationally, 35th rank globally, comparable to the level of Australia) is another strength. However, professional management is rather scarce, where the oblast is 5th on the national listing but ranks 101st in the international comparison, at the level of Albania.

Overall, financial markets are as efficient in Dnipropetrovsk as on average. Financial market sophistication (41st rank globally, at the level of Kuwait) is higher than in other oblasts, and banks appear to be sounder. However, financing is significantly less accessible than in Ukraine on average. Access to loans is ranked at 114th as opposed to 81st for the national average. Equally, risk capital and equity financing are more difficult to access in Dnipropetrovsk than in Ukraine on average, ranking 116th and 119th, respectively, as opposed to ranks 74 and 96 for the nation as a whole.

The good level of technological readiness is underpinned by the higher than average level of availability of the latest technologies in the oblast (score 3.9 comparable to the Philippines), although it suffers from insufficient levels of technology transfer through FDI, as well as a more negative perception regarding the legislation relating to information and communication technologies where it takes the last position. Although this legislation is in the realm of the national government, enforcement is frequently at the local level, which could explain the difference in assessment.

Good local supplier quality (50th rank globally, level of Cyprus), value chain breadth (50th rank, level of Latvia) and control of international distribution (score 4.8, 21st rank globally comparable to Hong Kong) place Dnipropetrovsk's business sophistication at the 5th rank nationally and the 80th rank in the global sample of 134 countries and regions on the business sophistication pillar. Room for improvement can be found in the state of cluster development where the oblast ranks last in the global sample of countries and regions. Upgrading marketing practices would also help to improve the competitiveness of local businesses (90th rank globally, level of Tanzania).

Innovation capacity is significantly higher in Dnipropetrovsk than in other oblasts of Ukraine. Its qualitatively good educational institutions and highly developed industrial base have led to intensive university-industry collaboration in research and broad availability of scientists and engineers (31st rank globally, level of Hungary). The oblast's capacity for innovation has reached the 29th rank globally, comparable to India. The local companies' awareness of the importance of R&D expenditures placed Dnipropetrovsk 1st nationally and 40th globally (at the level of China) on this indicator. A factor that could further enhance the region's competitiveness through innovation is more government procurement of advanced technology products. On this indicator the oblast ranks 100th in the global sample of 134 countries and regions.

When asked to name the most problematic factors for doing business, executives identified policy instability as the key problem, obtaining 21% of the responses. Government instability followed at second position with 16%. Difficulties in accessing finance were also confirmed by the executives' replies to the most problematic factors, where a lack of access to finance is the 3rd most problematic area for business in Dnipropetrovsk.

Donetsk Rank: 7

Highlights

- High quality institutions and infrastructure development are offset by poor results in health and primary education.
- Higher education and training institutions are rated below the national average, and in terms of labor market efficiency the oblast trails the rest of the country.
- Financial markets are relatively sophisticated, but technological readiness is fairly low.
- The region displays low levels of innovation and business sophistication.
- Government instability is perceived as the most problematic factor for doing business, followed by tax regulations.

In terms of economic size, with a GRP of UAH 58 billion, Donetsk is the second largest regional administrative unit in Ukraine behind the city of Kyiv. It represents some 13% of Ukraine's economy, compared to 17% for Kyiv. The oblast's economy is mainly structured around coal extraction, metallurgy and machine building industries. Other branches include chemical industry, power generation, and consumer goods. Donetsk's population of 4.6 million (as of 2006) – 10% of Ukraine's total – also makes it the most populated oblast. With a GRP per capita of UAH 12,490 and contributing more than 13% of Ukraine's GDP, Donetsk is about 30% richer than the country on average, second only to Kyiv. Between 2002 and 2005, the oblast registered annual GRP growth of 5.8%.[20]

Donetsk's growth is highly volatile. It barely reached 3% in 2002, but was at more than 10% twice in this decade, once in 2003 and again in 2004 before experiencing a dip in 2005. This dip was largely due to the drop in steel prices worldwide, which caused its GRP to shrink by some 3% compared to 2004. During this time, industrial output fell by 8%. In comparison, Ukraine's GDP grew by 2.7% over the same period. This volatility is not surprising given Donetsk's economic dependence on commodities production, so that growth is tightly linked to global demand conditions and is therefore vulnerable.

Donetsk enjoys exceptionally low unemployment, boasting a rate of 1.6% at the end of 2006, down from 3.4% in 2000, the lowest in Ukraine.

Donetsk ranks 7th out of 12 oblasts in the regional ranking of the Global Competitiveness Index. Its score of 4.07 is essentially the same as the Ukrainian average. By international standards, this puts Donetsk at 74th position, immediately after Vietnam. This modest performance is at odds with its position as the second richest region of Ukraine, showing once more that commodity fuelled economic wealth is not necessarily conducive to competitiveness. Donetsk as a region needs to address the many issues impinging on its competitiveness to achieve sustainable growth in the medium term. The erratic path of the region's GRP reveals that Donetsk's growth is highly dependent on the international economic environment.

Looking at the subindex level, Donetsk's performance is in line with the Ukrainian average in two out of the three subindexes (basic requirements and efficiency enhancers), but underperforms in the third (innovation and sophistication factors).

Donetsk is assessed in the middle of the regional ranking at 6th in the basic requirements subindex, which regroups the institutions, infrastructure, macroeconomic stability, and health and primary education pillars. This average rank dissimulates a very mixed performance within this subindex. On the positive side, the region does relatively well on the quality of its institutions, in second place behind Zakarpattya among the 12 regions. Yet, as highlighted in Chapter 3, Ukraine as a country fares rather poorly in this dimension of the GCI. In this context, Donetsk's performance is not cause for much celebration, as demonstrated by its overall low rank of 88th, which places the region at the same level as the Philippines.

A more notable relative strength in this subindex is the quality of Donetsk's infrastructure (see Figure 4.17). In the infrastructure pillar, Donetsk ranks third among the 12 regions, behind Kyiv and Dnipropetrovsk, two regions that are in a league of their own. Donetsk's performance is similar to Pakistan's and Poland's in this area. On a more negative note, high inflation in particular contributes to Donetsk's low ranking in the macroeconomic pillar (10th nationally). More worrisome and of

Figure 4.17 Donetsk's performance in the 12 pillars of competitiveness

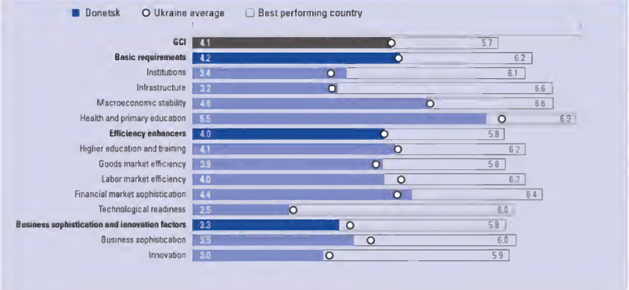
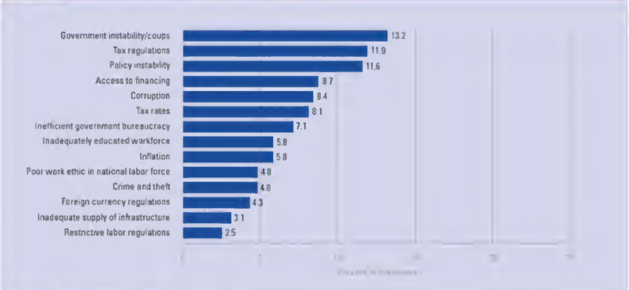


Figure 4.18 The most problematic factors for doing business in Donetsk



Source: World Economic Forum, Executive Opinion Survey 2008

particular concern is the performance in the health and primary education pillar. The high infant mortality rate, high tuberculosis incidence and low primary education enrolment place Donetsk last of all Ukrainian regions, and 99th overall, behind Mongolia and Kazakhstan, and just ahead of the Kyrgyz Republic (100th).

In the second subindex covering the efficiency enhancing factors, Donetsk ranks 7th, in line with Ukraine's average. Zakarpattya (4.2) is the only region in the top 50, on a par with many EU accession countries, notably Poland, Lithuania, Cyprus and Latvia. Several other regions, including Donetsk, cluster around the 70th rank. Donetsk's performance across the pillars of this subindex is uneven.

With a score of 4.1, Donetsk ranks a respectable 64th, within the top half of all countries and regions, in the higher education and training pillar, on a par with Romania. Because Ukraine as a country is relatively strong in this category (59th), Donetsk is only 9th in the regional ranking, topped by Dnipropetrovsk. Donetsk posts an impressive score of 5.4 for the quality of scientific education, placing it on a par with Japan. But it is last in Ukraine and 114th overall, for the prevalence of the Internet in schools. Donetsk is second to last in Ukraine, or 123rd overall, for the extent of on-the-job training.

With regard to goods market efficiency, the situation is somewhat different. Donetsk does well in the regional ranking (3rd), but it only ranks 79th internationally, given that this is not an area of strength for Ukraine more generally. This puts Donetsk at the level of Azerbaijan and Egypt. It positively stands out for the level of customer orientation (1st in Ukraine, 35th overall). But this is an exception. On all other goods market indicators, although consistently placed in the top half of the regional ranking, its performance is very mediocre by international standards. Of particular concern are barriers to trade. Even though trade barriers are essentially the consequence of the central government's trade policy, they seem to affect the regions differently. With a score of 2.4, Donetsk is at the absolute bottom (134th) of the international ranking with regard to the negative effects of trade barriers.

On labor market efficiency, Donetsk's performance is particularly mediocre. It is positioned last in Ukraine and 103rd in the international ranking, at a similar level as India. Looking in detail, Donetsk is ranked last in three of the six indicators for which regional data exists, namely the quality of relations between employers and employees (128th overall), hiring and firing practices (86th), and brain drain (120th). Furthermore, it ranks second to last (70th overall) with regard to the relationship between pay and productivity. As for the reliance on professional management, Donetsk ranks 9th in Ukraine and 115th overall. The positive note comes from the relatively flexible process of wage determination, despite the high concentration of unionized large steel and coal enterprises. Its score of 5.5, above Ukraine's average (5.4), puts Donetsk at the level of China on this aspect of labor market efficiency.

The oblast's financial market sophistication offers a more optimistic picture. Its overall rank of 52 (3rd in Ukraine) is Donetsk's highest across all pillars. The region consistently outperforms Ukraine's average in the five indicators for which regional data exists. Although by no means world class, access to the equity market (2nd in Ukraine, 69th overall), bank loans (2nd, 51st) and venture capital (2nd, 44th), appear not to be a major concern for the business community. However, the banking system is still perceived as underdeveloped and not particularly sound, as demonstrated by Donetsk's low 114th rank in this dimension, placing the region on a par with countries such as Mozambique.

The situation is gloomier when considering Donetsk's technological readiness. The oblast ranks 101st with a very low score of 2.5 out of 7, the same as Macedonia. This is a problem throughout Ukraine, with the country's best performer, Kyiv, also faring poorly with a mediocre score of 2.7, far behind the EU Accession 12 average (4.0).

In the third subindex of the GCI that regroups the business sophistication and innovation pillars, Donetsk posts particularly disappointing results. It ranks 11th (out of 12) in this dimension, only ahead of Cherkasy. From an international perspective, this corresponds to a rank of 93, placing Donetsk at the same level as Madagascar and Uruguay.

In the business sophistication pillar, Donetsk is 12th within Ukraine, and 95th overall, at the level of Kherson, as well as Ecuador and Uruguay. It also ranks last in 3 of the 9 indicators making up this category and performs poorly on all others. The quantity of local suppliers is rated very poorly. At 101st, Donetsk benefits from many fewer local suppliers than the leading region Zakarpattya, which ranks 35th. Even worse is the perceived lack of quality of local suppliers (119th). Donetsk also is assessed as basing its competitive advantage on much more basic qualities than the rest of Ukraine, which is not surprising given the structure of Donetsk's economy.

With regard to the capacity to innovate, with its score of 3.0, Donetsk ranks 9th in Ukraine, and well behind Dnipropetrovsk, which leads the way with a score of 3.5. In international comparison, the region is ranked 89th, on a par with Macedonia. Donetsk ranks 103rd overall in terms of company spending on R&D and 105th for the quality of the collaboration between universities and the private sector. The government is certainly not perceived as leading the way in terms of its own procurement of advanced technologies, shown by the low rank of 110 in this dimension, at the level of Bangladesh and well behind Ukraine's top performer, Zakarpattya (with a score of 4.2, ranked 32nd overall).

However, despite the unfavorable environment, companies in Donetsk maintain a capacity to innovate. This is not only true for Donetsk – ranked 52nd overall in this dimension – but also for Ukraine in general (48th overall). However, without making improvements in the areas described, this capacity is likely to erode over time.

4.5 The performance of western regions

The western parts of Ukraine had a shorter history of Soviet rule, a tradition of private farming and a more pro-Western outlook than the rest of the country. Agriculture accounts for almost one-third of the regional economy. Shared borders with Poland, Hungary, the Slovak Republic and Romania offer the promise of closer trade ties with the European Union. However, local leaders have nationalist leanings, and their suspicion of takeovers by Polish or Russian investors have slowed the FDI inflow from neighboring countries. The economy is dominated by the service sector taking advantage of higher labor market efficiency despite meager household incomes and high unemployment. The western regions grouping in this study includes the Lviv, Zakarpattya and Khmelnytsky oblasts.

Lviv Rank: 4

Highlights

- Lviv ranks first nationally in terms of macroeconomic stability, and second for the quality of its higher education system.
- Lviv boasts an above-average institutional framework, and business sophistication and innovation capacity is higher than in the rest of the country.
- One area of particular concern is the efficiency of the regional labor market, which suffers from an inefficient use of talent.
- Corruption is considered the most problematic factor for doing business.

With a population of 2.8 million – 5.3% of the total population of Ukraine – the Lviv oblast, located in the

Figure 4.19 Lviv's performance in the 12 pillars of competitiveness

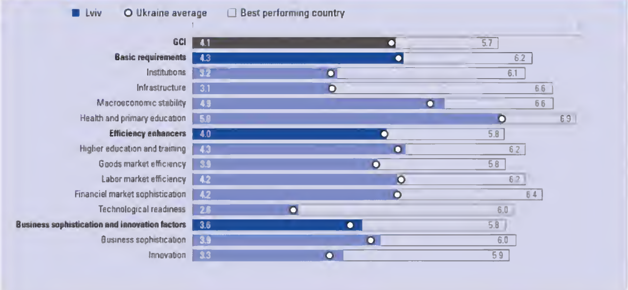
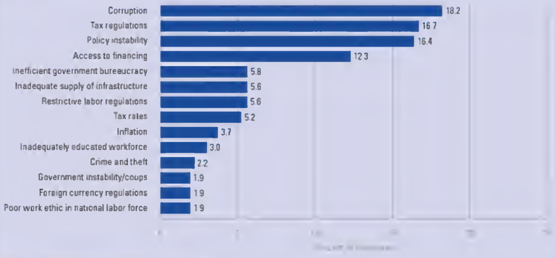


Figure 4.20 The most problematic factors for doing business in Lviv



Source: World Economic Forum, Executive Opinion Survey 2008

west at the Polish border, accounts for 3.9% of Ukrainian GDP. Per capita GRP in Lviv amounts to UAH 6,657, about 30% below the Ukrainian average, and the oblast contributes 3.9% of Ukraine's GDP. The local economy is structured around mechanical engineering, the petrochemical industry, construction materials, cellulose paper and printing industries, as well as food processing. Similar to some other regions, Lviv's growth performance since the beginning of the decade has been erratic. However, between 2002 and 2005 the region registered a fairly high GRP average growth rate of 6.7% per annum.[21]

Although Lviv is less wealthy than Ukraine on average, in terms of its overall competitiveness, it ranks above the Ukrainian average. Among the 134 countries and regions covered by the study, Lviv ranks a relatively high 63rd, right behind Russia and ahead of Greece.

With its above-average score, Lviv has a number of strengths compared to the rest of the country. An overview of the oblast's performance on the GCI is shown in Figure 4.19. On the institutions and infrastructure pillars of the GCI, its performance is comparable to the Ukrainian mean. However, the overall results mask some differences with respect to the quality of public institutions. Interestingly, businesses in the oblast assess corruption as a more serious problem than in Ukraine on average, but at the same time they find politicians more trustworthy and less prone to favoritism. Moreover, government spending is considered less wasteful and regulation less burdensome in Lviv, and the judiciary more independent. Challenges remain with respect to inefficiencies in the legal framework to resolve disputes and a lack of transparency of government policymaking.

Thanks to a lower inflation rate,[28] Lviv outperforms the nation on average in terms of macroeconomic stability, despite a slightly higher interest rate spread (the difference between the lending and the borrowing rate) than the national average.

With respect to health and primary education, Lviv ranks 77th in the entire sample of 134 countries and regions, at the level of Peru. At 87.8%, net primary enrolment is slightly lower in Lviv than in Ukraine on average, where only 88.5% of children attend primary school. Similarly, thanks to Lviv's tradition as a university city, higher education also stands out as above average. Businesses also assess the quality of education in Lviv as higher than on average. Lviv ranks 54th in the entire sample, while Ukraine reaches only the 71st position on this indicator. The overall educational system is considered more attuned to the needs of a competitive economy, and the quality of management schools is assessed as the best in the country, at 65th position.

The region's goods and financial markets display similar levels of efficiency as the national average, with only small variations on individual variables. Competition is considered to be a bit less intense in Lviv, markets are to a lesser extent dominated by a few companies, and taxation – an important challenge for Ukraine's businesses – is considered less burdensome. At the same time, demand conditions are less demanding than on average, with less sophisticated buyers and less customer orientation on the part of companies. The region ranks 66th on the financial markets sophistication pillar, ahead of Greece and Bulgaria and slightly above the national position. The financial sector could contribute to the region's competitiveness by boosting the sophistication of its products and services.

Lviv's labor market is slightly less efficient than Ukraine's. While the market is fairly flexible, the region uses its available talent less efficiently. In particular, the brain drain, where Lviv ranks 97th, is considered to be a more serious problem than in other parts of the country (rank 83). The geographical proximity to the European Union certainly exacerbates the problem compared to other regions. This is reflected in the negative migration balance of the oblast in 2006, although little official migration has been registered.[29] Interestingly, registered unemployment declined between 2001 and 2006 from 6% to 2.7, potentially reflecting unofficial temporary migration from the region.

The proximity to the European Union may also provide an explanation for the region's relatively better ability to adopt technology from abroad. The latest technologies are more available and firms absorb foreign technologies more easily than in other regions. This is certainly related to the large amount of FDI that has poured into car manufacturing plants in this region, although the overall per capita inflows of FDI still remained below the Ukrainian average in 2006.[30]

Business practices in Lviv rate above the average: clusters are comparably well developed, with more local suppliers providing producers easier access to supplies. As a university centre with a long tradition, it is not surprising that the oblast is more innovative than the national average. This can be attributed to competitive advantages such as the better availability of scientists and engineers (rank 43 as opposed to 80 for Ukraine), and the generally higher quality of research institutions (44th as opposed to 56th for Ukraine as a whole).

When asked to assess the most problematic factors for doing business (see Figure 4.20), business leaders consider corruption as the key obstacle. It receives 18.2% of the responses, as opposed to 12.5% for Ukraine as a whole. Tax regulations and policy instability, as well as access to finance are also considered serious impediments.

Zakarpattya Rank: 3

Highlights

- Although ranked fairly low by international standards, the region tops the national ranking for the quality of its institutions and ranks first within Ukraine for the efficiency of its labor market and the sophistication of its businesses.
- The development of infrastructure represents the main weakness, ranking 7th among Ukraine's regions and with a score below the national average.
- Access to financing, policy instability and tax regulations are the three most problematic factors for doing business.

Zakarpattya is one of the poorest regions in Ukraine, yet since the beginning of the decade it has experienced above-average economic growth. With a population of 1.2 million – accounting for 2.7% of the total – and GRP per capita of UAH 5,373, it contributes only 1.5% of total Ukrainian GDP. Following a boom period with average growth hovering above the national average between 2002 and 2005 amounting to 8.2% per annum, in 2005, the economy contracted by 1.5%. The local economy is primarily structured around timber processing, chemicals, light industry, recreation and tourism.

Despite its low per capita income, Zakarpattya comes in third in terms of competitiveness among the 12 regions assessed, occupying a relatively high 57th rank among the 134 countries and regions in the full sample, outperforming both Turkey and Russia. The region has some pronounced strengths that contribute to this good assessment, topping the Ukrainian regional rankings on a number of pillars and variables.

An overview of Zakarpattya's competitiveness performance is presented in Figure 4.21. The relatively efficient and transparent public institutions represent a particular strength. In the institutions pillar, the region scores significantly better than the national average, 76th in the overall sample compared with the 108th rank occupied by Ukraine. In particular

Figure 4.21 Zakarpattya's performance in the 12 pillars of competitiveness

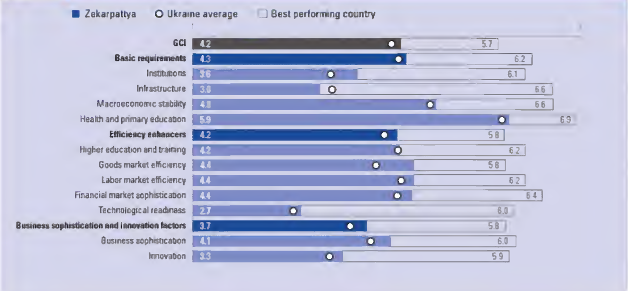
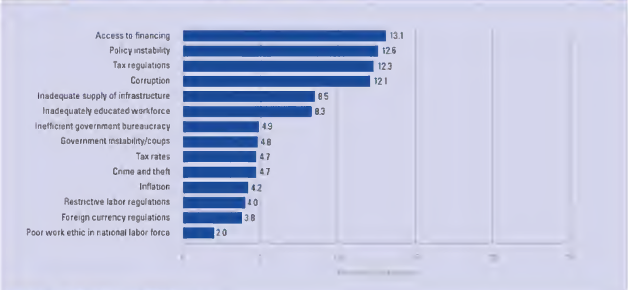


Figure 4.22 The most problematic factors for doing business in Zakarpattya



Source: World Economic Forum, Executive Opinion Survey 2008

with respect to the protection of property rights, both physical and intellectual, the region scores significantly better than the national average. In addition, factors related to the efficiency of government, such as the transparency of policymaking, the burden of regulations, and the wastefulness of spending receive a better assessment than the national average, as does the overall security situation. In terms of security, police services are more reliable and crime and violence are less costly to business than in other parts of the country. Zakarpattya is consistently the best performing region on the indicators related to security.

However, despite its important role as transit region for goods transported from the EU to the country's centre and the Caucasus, infrastructure is underdeveloped. The quality of roads, already assessed as poor in Ukraine as a whole, is below these standards. It ranks at the level of Timor-Leste, one of the worst performers in the entire sample. Also, telephone infrastructure is less developed than in other parts of Ukraine.

Zakarpattya performs slightly better than the average in terms of macroeconomic stability, and health and primary education. Primary enrolment is higher than in Ukraine overall and HIV and tuberculosis have a weaker impact on business. But the quantity and quality of higher education and training are slightly above average.

Zakarpattya displays the most efficient goods markets among the 12 Ukrainian regions, where it ranks a high 45th out of 134 countries/regions, as compared to a low rank of 88 for Ukraine on average. Zakarpattya's goods markets are rated as more efficient than Hungary's overall, and on specific indicators, the oblast has results comparable with those obtained for much more developed economies. For example, in terms of the intensity of local competition, Zakarpattya achieves a score of 5.7, which corresponds to a 15th rank overall, right ahead of France. The region's executives also consider regulations relating to FDI less restrictive and FDI more prevalent. This is likely related to the currently suspended special economic zone created in 1998, which attracted large amounts of FDI.

With respect to the efficiency of labor and financial markets, the region also places above the Ukrainian average, coming in at 45th and 51st as opposed to 63rd and 68th for Ukraine, respectively. The good assessment of labor market efficiency is mirrored by the positive development in terms of employment in the region. Between 2001 and 2007, the registered unemployment rate declined significantly, from 6 to 2.8%. This decline was even more marked in Zakarpattya than in Ukraine on average.

Technological readiness in the Zakarpattya oblast is roughly in line with the overall national average. While the region's performance in terms of the number of personal computers lags behind, this is offset by the perception of the business community that the latest technologies are more widely available.

In terms of business sophistication and innovation, Zakarpattya outperforms the national average by a narrow margin. Business leaders judge the quantity and quality of local suppliers as being above the national average. They also assess production processes and marketing as more developed than the average. However, the region is assessed as producing goods lower on the value chain than in other parts of Ukraine.

When asked to name and rate the most problematic factors for doing business, executives from Zakarpattya express a slightly different opinion than the Ukrainian average. They view access to finance, followed by policy instability, tax regulations and corruption as the most serious impediments to doing business, as shown in Figure 4.22.

Khmelnytsky Rank: 5

Highlights

- The region's performance is largely in line with Ukraine's average across the pillars.
- Khmelnytsky ranks above Ukraine's average in three categories: quality of institutions (although low by international standards), health and primary education, and labor market efficiency.
- Although ranked 5th nationally, its level of technological readiness is very low, putting the region on a par with Albania and Nigeria.
- Tax regulations, policy instability and corruption are the most important problematic factors for doing business.

With a population of 1.3 million, and GRP per capita of UAH 5,764, Khmelnytsky contributes approximately 1.8% of Ukraine's GDP. Between 2002 and 2005, Khmelnytsky grew by 8% per annum. The oblast's economy is structured around mechanical engineering and metal processing, power generation, food and beverage and other light industry.[12] Growth in recent years was mainly based on the expansion of industrial output, moving away from agricultural production.

Khmelnytsky outperforms the Ukrainian average in the overall sample by a narrow margin and with a score of 4.10, it ranks 69th, just ahead of Brazil, and behind Costa Rica. Among the 12 regions assessed in this study, it ranks 5th.

Khmelnytsky's performance on the 12 pillars of competitiveness largely mirrors the country's average scores, as shown in Figure 4.23. Institutions are assessed as somewhat more efficient by business leaders from Khemlnytsky than in Ukraine on average. Here, the region ranks 94th compared with a ranking of 108 for Ukraine in a sample of 134 countries and regions. Business leaders in the region have more positive views about the political class. They find that politicians are more trustworthy and the public administration less corrupt. Moreover, government spending is considered more efficient and government officials less prone to favoritism when deciding on policies and contracts. On the other hand, the security environment receives a worse assessment than the regional average, limiting potential business development possibilities more than in Ukraine on average.

Infrastructure is slightly below national standards. Khmelnytsky ranks 79th, between Kazakhstan and Sri Lanka in the global ranking of 134 countries and regions, compared with Ukraine's higher ranking of 76th. The lower quality of railroads, air transport infrastructure, and electricity supply contribute to this result, as does the less developed network of fixed telephone lines.

The region is very much in line with the national average with respect to macroeconomic stability, and health and primary education, as well as higher education. In terms of education, the significantly lower assessment of the quality of education is noteworthy, both in terms of overall education, but also in terms of specific aspects, such as math, science and management training. Ranked 75th, Khmelnytsky comes in at the level of El Salvador in terms of quality of education.

In this rather agrarian oblast, goods markets are also in line with the overall national assessment, yet with some differences in the details. Overall local competition is perceived as more intense in the region, and market dominance less pervasive than in Ukraine on average. The region presently is of little interest to foreign investors, due to its largely agricultural structure. In 2006, just US$ 28.4 million was invested in Khmelnytsky (the overall FDI for Ukraine in 2006 amounted to US$ 4,278 million[13]) and foreign ownership is less prevalent than the national average. The lower dynamism of the business sector is also reflected in the slightly lower business creation than average in Ukraine. In 2006, 1.3 enterprises were created per 1,000 inhabitants in Ukraine, but only 1.1 were set up in Khmelnytsky.[14]

Figure 4.23 Khmelnytsky's performance in the 12 pillars of competitiveness

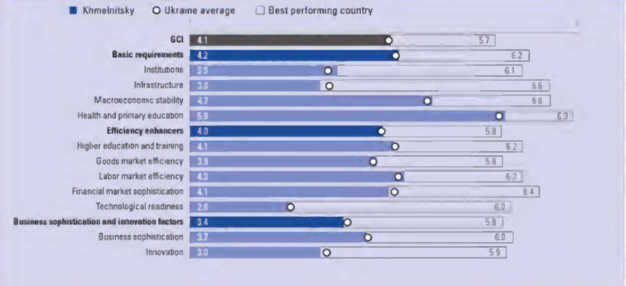
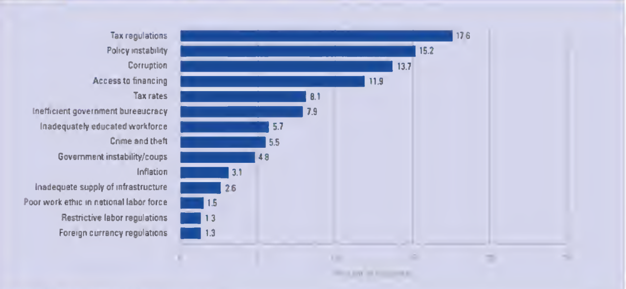


Figure 4.24 The most problematic factors for doing business in Khmelnytsky



Source: World Economic Forum, Executive Opinion Survey 2008

Unlike in other western regions of the country, the unemployment rate has stagnated since the beginning of the decade. This trend is reflected in the more rigid labor market, mainly with respect to hiring and firing practices and the flexibility of wage determination. Interestingly, executives have a more positive view on the effect of the brain drain on the country's businesses. This is confirmed by 2006 migration data, which shows that emigration and immigration have more or less evened out.

Although Khmelnytsky ranks below the Ukrainian average with respect to financial market sophistication, the overall assessment remains reasonable, in line with the region's overall rank. The significantly easier access to loans stands out (66th position overall), but is offset by a weaker assessment of the soundness of banks, ranked a low 127th.

With a ranking of 93, technological readiness in the region is low, but still above the Ukrainian average. It is noteworthy that latest technologies are considered less available than on average, which is reflected in the lower penetration of personal computers of 2.6 per 100 inhabitants, compared to the national average of 3.8 per 100. The best performer among the regions assessed, Kyiv, has a significantly higher penetration rate of 13.5 per 1,000. Given the predominantly agricultural structure of the region's economy, and the lower levels of incoming FDI, this is also to a lesser extent a source of technology transfer (ranked 111th), below Ukraine's average.

Khmelnytsky's companies demonstrate lower levels of innovation than the national average. With respect to business sophistication, although the overall assessment is in line with national scores, the local suppliers are rated as of lower quality than in Ukraine on average, as well as production process sophistication and the extent of marketing in the region. As regards innovation, Khmelnytsky ranks 88th as opposed to a 77th position for Ukraine. With a score of 3.0, the region ranks between Mali and Macedonia. This poor assessment mirrors the significantly lower than average quality of scientific research institutions and overall low capacity for innovation. In particular, scientists and engineers are less available in Khmelnytsky than in other parts of the country, ranked 102nd compared with a significantly higher 80th rank for Ukraine as a whole, and significantly higher in individual regions. This is also reflected in the low number of research institutions active in the region – only six out of 1,452 active research institutions were located in Khmelnytsky in 2006.[15]

In terms of the most problematic factors for doing business, the business community identified tax regulations as the most important, followed by policy instability and corruption (see Figure 4.24). Access to finance is identified as the fourth most important factor, accounting for 11.9% of responses compared with 9.7 at the national level.

4.6 Competitiveness performance of southern regions

The economy of the southern grouping, which in this study includes the Autonomous Republic of Crimea and the Kherson oblast, is dominated by agriculture and services sectors that have been evolving rather sluggishly. In addition, the mechanical engineering and construction sectors, which account for a large share of industrial output, have contracted sharply since the onset of transition. The bustling Black Sea ports in the south provide interesting opportunities for investors. However, a lack of transparency coupled with government favoritism hinders companies' investments into freight terminals. The interest of investors has also been dampened by corruption-prone inspections.

Crimea

Rank: 9

Highlights

- Weak performance in infrastructure and health and primary education contributes to Crimea's low overall ranking.
- Macroeconomic stability is largely in line with the national average, as is the quality of institutions.
- Room for improvement exists with respect to the efficiency of goods, labor and financial markets.
- Policy instability is considered the most problematic factor for doing business.

With GRP per capita of UAH 6,460, the Autonomous Republic of Crimea (Crimea) produces 2.9% of Ukraine's total GDP. With 2 million inhabitants, Crimea is home to 4.2% of Ukraine's population. The economy is mainly structured around agriculture, healthcare and tourism. The main sectors include food production, chemicals, mechanical engineering and metallurgy, as well as hydrocarbon processing. The sea resort and health centers that make up the peninsula's recreation infrastructure have benefited from the clement, partly subtropical, maritime climate and generous funding during Soviet times, but are now in need of upgrading and modernization. The territory's economy over the four-year period of 2002 to 2005 experienced 6.9% growth per annum.[16]

In the regional Global Competitiveness Index, Crimea ranks 9th among the 12 regions of Ukraine. With a score of 3.99, Crimea ranks 81st in the international ranking, behind the Philippines and Romania. Crimea's score is also below Ukraine's average of 4.1. The performance of Crimea is mediocre across the three subindexes of the GCI. Looking at the pillar level (see Figure 4.25), the region appears only once in the top half of the regional ranking, ranked 6th for business sophistication. It receives particularly low scores in terms of financial market sophistication (12th within Ukraine), innovation (11th) and technological readiness (11th).

In the institutions pillar, Crimea achieves a very modest score of 3.1 corresponding to the 105th position in the international ranking, on a par with Macedonia and Moldova. In half of the indicators, Crimea ranks below the 100th mark. The only positive aspect in this otherwise poor assessment is the relative impartiality of government officials in their dealings with the public. Crimea ranks first in Ukraine and 41st overall in this indicator. Yet this does not mean that corruption is not a problem in the region. Diversion of public funds due to corruption is frequent (9th in Ukraine, 91st overall), the trust in politicians essentially non-existent (8th, 104th), and the political processes is rather opaque (7th, 115th). Furthermore, the business community in Crimea places corruption second in the list of the most problematic factors for conducting business, after policy instability (see Figure 4.26). Another area of major concern is the protection of property rights. Crimea ranks 11th in Ukraine, and 123rd overall, at the level of Bolivia on this indicator. Arbitrary land seizure by the growing number of returning Crimean Tatars deported by Soviet leaders certainly contributes to the negative perception of property rights enforcement. Government regulation is overly burdensome, at 9th in Ukraine, 122nd overall, on a par with Russia. As for the quality of private institutions, the second component of this pillar, Crimea is assessed poorly with an overall rank of 121, although the score remains above Ukraine's average.

With regard to infrastructure, Crimea ranks 9th among Ukraine's regions and 82nd overall, at the level of Kazakhstan. Road infrastructure remains underdeveloped. With a score of 1.9, Crimea places 119th, at the level of the Kyrgyz Republic, Albania, Bolivia and Paraguay. The cities ofYalta, Feodosiya, Kerch, Sevastopol, Chornomorske

Figure 4.25 Crimea's performance in the 12 pillars of competitiveness

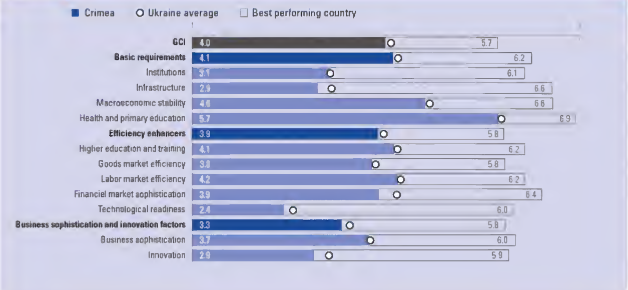
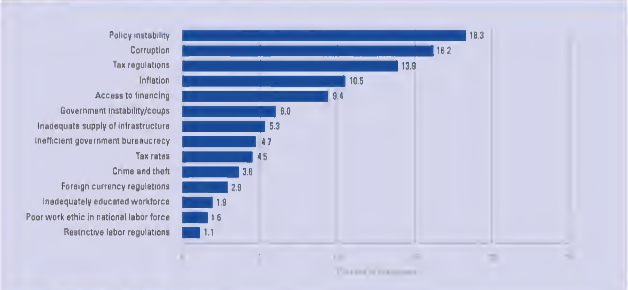


Figure 4.26 The most problematic factors for doing business in Crimea



Source: World Economic Forum, Executive Opinion Survey 2008

and Eupatoria are all connected to major sea routes, however, Crimea ranks only 91st (10th in Ukraine) for the quality of port infrastructure. On a slightly more positive note, the region does better (3.8) than Kyiv (3.4) in terms of the quality of the air transport infrastructure, and at 86th ranks at the level of the Slovak Republic.

In the macroeconomic stability pillar, Crimea ranks 91st overall. In the two indicators for which regional data is used instead of national figures – inflation and interest rate spread – Crimea ranks very low, but is roughly in line with the national average. Crimea ranks 83rd overall for health and primary education, just behind Romania (79th), and ahead of Russia (86th).

Like Ukraine in general, Crimea receives relatively good marks for higher education and training in the region. Its score (4.1) is almost the same as Ukraine's average (4.2), placing Crimea in 8th position among regions, and 63rd overall, at the level of Romania. As highlighted in Chapter 3, Ukraine exhibits very high enrolment rates, but the quality of education is deficient. Crimea is no exception. It ranks 87th when it comes to the general quality of education, which is lower than Ukraine's average. On the indicator measuring whether the educational system meets the needs of a competitive economy, Crimea ranks second to last in Ukraine and 78th overall, a notch behind Moldova.

The situation is even bleaker as to the efficiency of the goods, labor and financial markets. Crimea ranks 97th for its goods market efficiency. In particular, the level of competition is relatively weak in international comparison. With a score of 4.2 (106th overall) it stands at complete odds not only with Ukraine's best-performing

Zakarpattya (5.7), but also with the country's average (4.7). Even more worrisome is the extent and adverse effect of taxation (119th) which, according to the business community deters both work and investment.

Further room for improvements exists with respect to labor market efficiency. Crimea ranks 75th overall in this area, on a par with the Kyrgyz Republic, with a score equal to Ukraine's average (4.2) and slightly behind leading Dnipropetrovsk (4.4). Among the weaknesses, Crimea ranks last in Ukraine and 78th overall with respect to the relationship between pay and productivity, which is deemed weak. It is also a laggard with regard to the flexibility of the wage setting process. On the positive side, it does very well in terms of the ease of hiring and firing procedures, ranking second behind Cherkasy and 12th overall.

Crimea lags significantly with respect to financial market sophistication. The oblast ranks a rock bottom 12th within Ukraine and 93rd overall, just behind Moldova and ahead of Burkina Faso. Underpinning this poor performance is the low sophistication of the financial sector (last in Ukraine, 106th overall) and weaknesses in the banking system (last in Ukraine and 132nd overall on a par with China). Although ranked 5th in Ukraine with respect to access to credit, Crimea still does modestly by international standards in this area.

In terms of technological readiness Crimea ranks 107th overall with a very low score of 2.4. This is the region's lowest position across all the pillars of the GCI. It corresponds to the level of Moldova and several African countries. On the indicators for which regional data is available, Crimea consistently underperforms, or merely matches Ukraine's average, although it is not too far behind Ukraine's overall score (2.6) or that of the best performer Kyiv (2.8). This is due to the extremely poor level of technology penetration and usage in the country as a whole. In Crimea, the latest technologies are mostly unavailable (ranked 115th), and when they are, firms are slow to adopt them (118th). Only little technology transfer occurs through FDI (131st). The personal computer penetration rate – the only hard data indicator available at the regional level – is just 3.1 per 100 inhabitants, compared with 3.8 per 100 for Ukraine as a whole, which corresponds to Egypt and Sri Lanka.

The last subindex of the GCI measures the level of business sophistication and innovation capacity. In the subindex, Crimea ranks 9th among Ukraine's regions and 90th internationally. Specifically for business sophistication, Crimea ranks 81st, a similar score as Azerbaijan and Kazakhstan, in line with Ukraine's national rank (79th). A majority of Ukraine's regions, including the city of Kyiv, are clustered around the 80th place in the international ranking, while Zakarpattya (57th), Sumy (63rd) and Lviv (70th) positively distinguish themselves. The sophistication of business operations and strategies in Crimea is very limited. The only notable strength is its rank of 39 for the state of cluster development. The tourism cluster represents a unique opportunity and Crimea should aggressively pursue the development of this sector.[37] Tourism is a major source of revenue, it creates jobs for both skilled and low skilled workers, and is a catalyst for the development of transport infrastructure and the spread of new technologies.

In the innovation pillar Crimea ranks second to last within the country and close to the 100th mark overall. The region's capacity to innovate is fairly low, ranked 78th compared with the relatively good 48th rank for Ukraine as a whole. The weak innovative capacity mirrors lower spending on R&D by companies, as well as limited availability of scientists and engineers in the region.

Crimean business leaders highlight policy instability as the key obstacle to doing business, followed by corruption (see Figure 4.26). Corruption is assessed as a more serious impediment than at the national level, as is inflation, which comes in as the fourth most important obstacle.

Kherson Rank: 11

Highlights

- Kherson scores higher than the national average only in terms of macroeconomic stability.
- Of great concern is Kherson's dismal performance in terms of the institutional environment, comparable to that of Zimbabwe.
- Infrastructure development compares rather unfavorably to the rest of the country.
- Other major weaknesses are to be found in health and education, goods market efficiency, and technological readiness.
- Tax regulations and policy instability are the most problematic factors for doing business.

With GRP per capita of UAH 5,713, the Kherson oblast accounts for 1.5% of Ukrainian GDP, and 2.4%[38] of Ukraine's population. The key sectors in the local economy are energy and power, agriculture, food and beverage processing, engineering, steel metallurgy, manufacturing equipment, and pulp and paper production. Although in 2005, the oblast experienced a downturn and GRP contracted by almost 1%, the four-year trend between 2002 and 2005 showed 4.9% economic growth per annum.

Kherson is ranked second to last among the 12 oblasts, only ahead of Cherkasy. It ranks a low 91st within the GCI sample of 134 countries and regions, behind Uruguay and just ahead of Bosnia and Herzegovina. An overview of the region's competitiveness performance is shown in Figure 4.27.

With respect to the quality of institutions, Kherson ranks a very low 121st in the sample of 134 countries and regions. The low ranking on this pillar significantly undermines the region's overall competitiveness because institutions are the backbone of an economic system. In Kherson, the challenges include very burdensome government regulations, which are not only the most onerous among the 12 regions, but also worldwide, trailing behind several countries at a more basic level of development. In addition, government spending is considered very wasteful (ranked a low 129th on this indicator) and the transparency of government policymaking

Figure 4.27 Kherson's performance in the 12 pillars of competitiveness

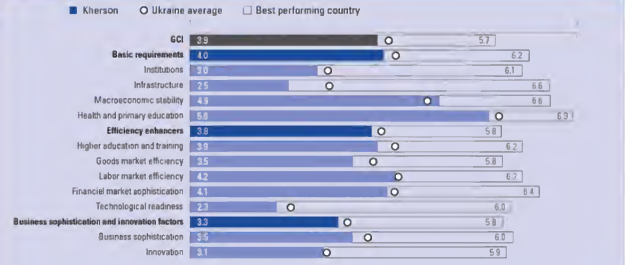
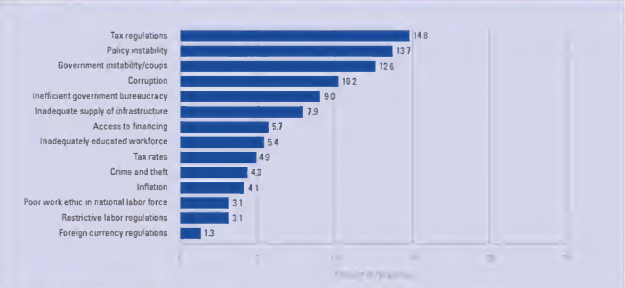


Figure 4.28 The most problematic factors for doing business in Kherson



Source: World Economic Forum, Executive Opinion Survey 2008

is lacking as compared to the entire sample (ranked 129th). Therefore, it is hardly a surprise that trust in the financial honesty of politicians in this region is measurably lower (score 1.4) than in Ukraine on average (score 1.8) and in the best performing region, Sumy (score 2.6). It is noteworthy that the security situation is considered more conducive to doing business than in the country on average. For example, the police are considered to be more reliable in Kherson (88th rank) than in the country in general, and this is conducive to less organized crime.

Kherson's private institutions receive a worse assessment than in Ukraine on average. Corporate governance standards appear to be less strictly enforced in this region. Above all, business leaders assess their peers as behaving less ethically (rank 125) and auditing and accounting standards as not strictly enforced (122nd).

Kherson ranks 103rd on the infrastructure pillar, which is a poor assessment if one considers that Ukraine achieves a better 76th position overall. This considerable difference can be traced to a significantly lower assessment on all categories of transport facilities, as well as power and telecommunications infrastructure. On the quality of overall infrastructure, Kherson ranks a low 100th. The railway remains the best means of transportation (62nd rank globally, comparable to Morocco), whereas the roads (1.8) are less well developed and maintained than in the country on average (2.2).

Kherson's health and primary education indicators stand out as some of the country's lowest, resulting in a low rank on the overall pillar at 94th, compared to 78th for the country on average. Tuberculosis appears to be a significant problem in the region, as the incidence is twice as high as in Ukraine on average (206 versus 99 cases per 100,000 people respectively) and more than three times higher than that registered in Poltava (66 cases per 100,000 people). Similarly, business executives expressed the view that HIV/AIDS is having a stronger impact on their daily business than in other regions.

On the higher education and training pillar, educational outcomes are significantly below the country average in the overall pillar, as well as in all individual categories assessed. The quality of education overall, but also in specific areas such as management, and math and science are below national levels. Higher education and training indicators also stress little availability of specialized training and research institutions (score of 2.9 in the oblast comparable with the Kyrgyz Republic, versus Ukraine's national average of 3.5) and insufficient staff training by the private sector (score of 2.4 in the oblast and 3.0 in Ukraine on average).

Feeble local competition (ranked 109th), fairly concentrated markets, weak foreign ownership and low buyer sophistication are major challenges to improving the goods market efficiency in Kherson, which is currently ranked 115th in the global sample of 134 countries and regions, behind Nicaragua and just ahead of Ethiopia. The low prevalence of foreign ownership is particularly worrisome, as Kherson is the weakest performer among the 12 regions included in this study. The FDI inflow into the region in 2006 was one of the lowest in Ukraine, amounting to just US$ 17 million.[30]

Kherson ranks 72nd in the global sample of 134 countries and Ukraine's regions on labor market efficiency. Insufficient cooperation in employer-employee relations and the lack of professional management are the key impediments to the oblast's competitiveness on this pillar. On a more positive note, wage determination is flexible, and salaries and wages are related to employee productivity in this region. On the whole, however, talent is used less efficiently than in the rest of the country and there is a more severe brain drain problem.

Among other areas to be further developed to strengthen Kherson's competitiveness are improving financial market efficiency and technological readiness. To a lesser extent given Ukraine's stage of development, business sophistication and innovation are also in need of improvement. In all of these areas, the oblast ranks slightly below the national average. In particular, measures aimed at furthering the capacity to adapt technologies and in IT-related network industries could significantly increase the region's technological readiness. The latest technologies are difficult to obtain in Kherson and firms are relatively reluctant or unable to absorb new technologies. At the same time, given the overall low level of FDI, there is little transfer of technological know-how through foreign investment. Given its lower GRP, it is unsurprising that Kherson's levels of business sophistication and innovation slightly lag behind the country as a whole in terms of both the overall subindex and the individual indicators.

In terms of the key obstacles to doing business, business leaders pointed to heavy tax regulations, policy and government instability, as well as corruption, which is prevalent in Ukraine as a whole. In line with the previous assessment related to the quality of institutions, inefficient government bureaucracy is among the relatively more problematic factors (For full results, see Figure 4.28).

4.7 Conclusions

This chapter has assessed the competitiveness of 12 Ukrainian regions: Kyiv City, Sumy, Poltava, Vinnytsya, Cherkasy, Lviv, Zakarpattya, Khmelnytsky, Dnipropetrovsk, Donetsk, the Autonomous Republic of Crimea and Kherson. It benchmarks the regions among each other and against the Ukrainian national average, as well as with the 121 other countries covered by *The Global Competitiveness Report 2006-2007*. These regions were selected to represent different socio-economic, cultural and geographical structures in Ukraine.

The analysis shows that although Ukraine's regions are very diverse in terms of culture, economic structure and dynamism, the regions diverge to a lesser extent in terms of competitiveness as measured by the Global Competitiveness Index. Yet, differences persist. The best performing region, the city of Kyiv, is in the same league as the central European member states; the least competitive region, Cherkasy, is comparable to countries with significantly lower per capita income, such as Armenia, Sri Lanka and Pakistan. By relying in part on the Executive Opinion Survey, the results capture valuable perceptions of the business community in the 12 regions, as well as differences in selected hard data indicators. The chapter is complemented by regional competitiveness profiles at the end of this report.

The analysis is based on the methodology of the Global Competitiveness Index and describes the results for each region in detail. It highlights a number of important strengths and weaknesses for each of the 12 categories assessed by this Index. Although many of the policies affecting the oblasts are decided at the national level, this assessment provides valuable regional competitiveness indicators for policymakers, which were unavailable until now.

This chapter is the first analysis of this kind undertaken for Ukraine's regions, thus filling an important gap with respect to the availability of data, in particular on many of the qualitative factors affecting the economic development of Ukraine's regions, such as the quality of institutions and the educational system. At the same time, this analysis provides valuable insight into each region's strengths and weaknesses in the area of competitiveness. It can provide a first step towards identifying challenges at the regional level that should be analysed by policymakers in more detail in order to identify appropriate policy responses.

Notes

1 When he was elected in 1999, Viktor Yushchenko became the first prime minister to have spent much of his working life in the western part of the country.

2 The term oblast refers to an administrative unit in some former Soviet republics. In this report, it is used interchangeably with region. Ukraine is subdivided into 24 oblasts, one autonomous region (Crimea), and two municipalities with special status (Kyiv and Sevastopol). The report covers 10 oblasts, the Autonomous Republic of Crimea, plus the municipality of Kyiv (see Section 4.1 for details).

3 Glowny Urzad Statystyczny 2007. The wealthiest region is the voivodship Mazowieckie and the poorest Podkarpackie. All data is for 2005, the latest year available.

4 All data is for 2005, the latest year available.

5 The concept of stages of development reflects wage differences between countries as they move up the development ladder. Although wage differences within countries exist, labor and capital mobility ensure that these are evened out over the medium to longer term.

6 In this Report, unless mentioned otherwise, Kyiv refers to the city– not the oblast.

7 All figures for 2005. Source: State Statistics Committee of Ukraine 2007.

8 Figures are for 2006. Donetsk (4.6 mio), Dnipropetrovsk (3.4 mio), and Kharkiv (2.8 mio) are bigger. The latter is not covered in this Report.

9 State Statistics Committee of Ukraine 2007. Data for 2006 was not available.

10 See Section 3.1 for a discussion about the importance of the institutions pillar.

11 Global Marketing System Gateway 2008.

12 State Statistics Committee of Ukraine 2007.

13 State Statistics Committee of Ukraine 2007.

14 ICPS 2003.

15 ICPS 2003.

16 State Statistics Committee of Ukraine 2007.

17 Global Marketing System Gateway 2008.

18 Marketing Information Database 2008.

19 Marketing Information Database 2008.

20 State Statistics Committee of Ukraine 2007.

21 State Statistics Committee of Ukraine 2007.

22 Global Marketing System Gateway 2008.

23 State Statistics Committee of Ukraine 2007.

24 State Statistics Committee of Ukraine 2007.

25 In February 2005, the Government revoked the 2005 National Privatization Programme Bill, withdrawing it from the Verkhovna Rada, and called on the Prosecutor General to review the legality of privatization on a case-by-case basis. The review covered more than 200 enterprises.

26 State Statistics Committee of Ukraine 2007.

27 State Statistics Committee of Ukraine 2007.

28 Although it is difficult to explain the regional differences in inflation rates, we nevertheless included them into the calculation of the index, as the differences have proven to be significant.

29 State Statistics Committee of Ukraine 2007.

30 State Statistics Committee of Ukraine 2007.

31 The unemployment rate has been calculated as the ratio of registered unemployed to the average annual number of the population of working age. It has to be noted that the unemployment rate for Ukraine according to the internationally comparable methodology used by the International Labour Organization (ILO) amounted to 7.4% in 2006, as opposed to 2.7% according to the national definition we report for the regions. Source: State Statistics Committee of Ukraine 2007.

32 Global Marketing System Gateway 2008.

33 State Statistics Committee of Ukraine 2007.

34 State Statistics Committee of Ukraine 2007.

35 State Statistics Committee of Ukraine 2007.

36 State Statistics Committee of Ukraine 2007.

37 See Chapter 6 in this Report for an in-depth analysis of the performance of Ukraine in terms of Travel & Tourism competitiveness.

38 State Statistics Committee of Ukraine 2007.

39 State Statistics Committee of Ukraine 2007.

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CHAPTER 5

Gauging Ukraine's Networked Readiness: Findings from the Networked Readiness Index 2007-2008

IRENE MIA
World Economic Forum

The capacity to generate knowledge and integrate it into production processes and into everyday life is becoming increasingly central in countries' efforts to boost competitiveness, thereby ensuring sustained growth and prosperity for their citizens. It is particularly important for countries approaching the technological frontier to generate cutting-edge technology and processes as a prerequisite for continued competitiveness. At the same time, absorbing and adapting knowledge to national needs is equally important for countries in less advanced stages of development, such as Ukraine. Access to technology can help such countries move up the value-chain, improve the efficiency of their production processes, and enhance service quality and provision, thus facilitating the evolution to more advanced stages of development.

Among the different types of technologies, information and communication technologies (ICT) occupy a special place given their extraordinary impact on production processes across industries and sectors and ultimately, on productivity increases. Moreover, ICT has been radically changing today's business, social and economic landscape by creating virtual social, work-related and business networks, as well as providing people with unprecedented access to resources, information and markets.

In view of these considerations, it is clear that an assessment of Ukraine's competitive potential cannot be complete without an analysis of how the country and its social actors are leveraging ICT in their everyday activities for boosting growth and improving living standards. The Global Competitiveness Index, used in this report to measure Ukraine's competitiveness, includes technological readiness and innovation among its pillars of competitiveness. However, the Networked Readiness Index (NRI) featured in *The Global Information Technology Report* series is a deep dive into the subject. The NRI is the main outcome of a research project undertaken by the World Economic Forum in 2001 – jointly with INSEAD since 2002 – aimed at measuring the extent to which countries fully benefit from ICT and the consequent enabling factors.

This paper uses the methodological framework set by the NRI to assess Ukraine's networked readiness using the 2007-2008 results, together with its evolution over the six years covered by the NRI time series. It is hoped that this will shed some light on the competitive strengths of the country in leveraging ICT and on the weaknesses that need to be addressed, as a priority, in the government's agenda and by Ukraine's main stakeholders.

5.1 Introducing the Networked Readiness framework

Figure 5.1 displays the networked readiness framework for assessing countries' preparedness to leverage ICT, which was developed in 2002. The framework rests on three main theoretical assumptions:

1. *The environment is key:* The necessary prerequisite for a country to benefit from ICT is to have in place or establish an ICT friendly and conducive environment because networked readiness does not develop in a vacuum. Environment is meant here in a very broad sense, comprising relevant elements of a country's market environment, and the regulatory framework, as well as the soft and hard ICT infrastructure.
2. *Networked readiness is a society's joint effort:* The second assumption is that no full leveraging of ICT is possible without a consensus and a joint effort of all social actors: government, the business sector and individuals. ICT prowess is not an exclusive responsibility of the government, but requires an equivalent focus and preparedness to use and develop it by civil society. In this sense, the development story of highly networked ready countries, such as Denmark, Israel, Singapore and Estonia shows that although the government played a leadership role in designing a digital agenda and in promoting ICT penetration rates, the involvement of the business sector and of civil society at large was key to the success achieved.
3. *ICT usage depends on ICT readiness:* The last assumption is that the actual usage of ICT by the government, business sector and individuals is largely influenced by the propensity and degree of their ICT preparedness.

The above framework translates into an index, the NRI, whose three main building blocks (i.e. environment, readiness and usage) comprise a total of 68 variables, regrouped in the following nine pillars:

Market environment – gauging the openness and friendliness of the general business environment for ICT development.
Political and regulatory framework – assessing the efficiency and transparency of public institutions and of the overall and ICT specific regulatory framework.
Infrastructure environment – assessing the overall quality of the ICT and innovation-related soft and hard infrastructure, including human resources.
Individual readiness – measuring individuals' disposition and preparedness to use ICT in their everyday lives.
Business readiness – gauging the business sector's disposition and preparedness to use ICT in its activities.
Government readiness – measuring the extent to which the government prioritizes ICT and has a clear vision of ICT's importance and how to promote its diffusion.
Individual usage – measuring the actual ICT use by individuals.
Business usage – examining the degree of ICT absorption and innovation in the business sector.
Government usage – assessing the use of ICT by government, with a particular emphasis on e-government services in place.

Full details of the variables included in the NRI 2007-2008 can be found in Annex A.

Along the lines of the World Economic Forum's competitiveness work, the NRI is composed of a mixture of hard data collected by international organizations such as the International Telecommunication Union

Figure 5.1 The Networked Readiness Index 2007-2008: the Framework

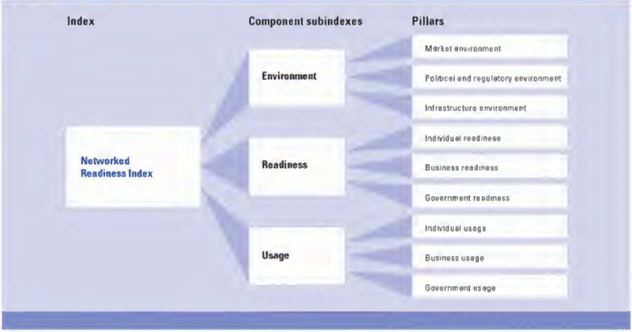
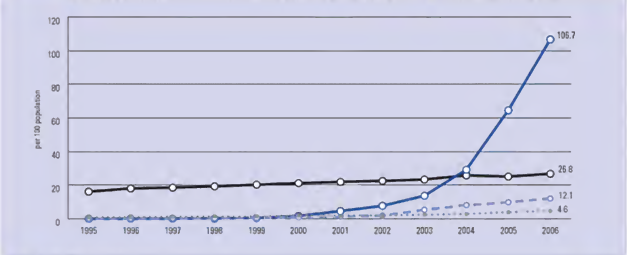


Figure 5.2 Evolution in penetration rates for selected indicators, 1995–2006



Source: ITU, *World Telecommunication Indicators 2007*

(ITU) and the World Bank, and survey data capturing qualitative dimensions relevant for networked readiness, such as the quality of the educational system or the degree of collaboration between the business sector and university on R&D. The latter data are derived from the Executive Opinion Survey that the World Economic Forum conducts every year in more than 130 countries with top business executives asked to assess different dimensions of their business environment, including ICT diffusion and innovation.[1]

The relevance of each variable to the concept each pillar intends to capture is reviewed periodically, given the extreme dynamism of the ICT sector and the desirability to include new relevant data as it becomes available. As a result, there can be some difference over time in the number and nature of the variables included in the NRI. However, the uniformity of the networked readiness framework ensures ample comparability in the NRI results over time and provides us with a six-year time series for Ukraine.

5.2 Setting the context: A look at the state of ICT diffusion in Ukraine

With its large internal market and highly educated labor force, Ukraine displays a clear potential for technology development and for ICT penetration. It represented, after Russia, the most important economic entity of the former Soviet Union,[2] but also held a privileged position in the latter for its scientific and technical prowess. A number of groundbreaking scientific discoveries have taken place in the country, such as the theory of digital automation and computer architecture developed in the Institute of Cybernetics of the National Academy of Science by Victor Glushkov, as well as the design and creation of the first computer in continental Europe in 1951.

However, the severe recession[3] that followed the collapse of the Soviet Union and the difficulties encountered in the transition process to a market economy prevented Ukraine from both progressing as quickly as other countries in the region[4] in networked readiness and from effectively leveraging its potential.

The economic recovery that began in the late nineties and the high growth rates experienced by the country in the last few years, boosted by strong domestic demand and improved export prospects, have coincided with an increased focus on ICT and technology. This has led, in turn, to increased ICT penetration rates and has been accompanied by an attempt at reforming the regulatory framework for doing business in general in a more market friendly way.

Figure 5.2 shows the evolution in penetration rates for a number of variables from 1995 to 2006: telephone lines, personal computers, Internet users, and mobile telephones per 100 inhabitants.

Although there has been a remarkable upward trend in most ICT variables, telecommunications has undoubtedly led ICT diffusion in the country, with a major role played by mobile telephony.[5] Mobile coverage in Ukraine is very high, with 106.7 people per 100 population having a cell phone in 2006, according to ITU (see Figure 5.2, blue line). This puts Ukraine in 22nd position among the 127 countries covered by the NRI 2007–2008, not far from the most advanced countries such as Finland (107.8) and Denmark (107.3), and with a higher penetration rate than Spain (106.4) and Sweden (105.9). Nevertheless, the average cost of a mobile phone call is still quite high: a three-minute peak time local call represents some 0.4% of the country's monthly GDP per capita, placing Ukraine 85th.

The recent boom in mobile telephony is undeniably a positive development as it reflects the increasing purchasing power of the Ukrainian population led by an expanding middle class. But it also reflects, to a certain extent, the poor state of fixed line infrastructure and communications. According to the ITU, in 2006 there were only 26.8 telephone lines per 100 inhabitants in the country (see Figure 5.2, black line), a far cry from the 69.4 of Switzerland, the top performer in that dimension, but also less than Slovenia (42.6), Croatia (40.2), the Czech Republic (31.5), Bulgaria (31.3) and Poland (29.8). The government has set a target to increase fixed line penetration to 40% by the end of the decade, but this will require important investment in the modernization and upgrading of infrastructure. The long-awaited privatization of Ukrtelecom, the state-owned former telecommunications company still dominating the fixed line market during 2007 should facilitate the modernization of the sector by attracting much needed private investment.

PC diffusion, in turn, has increased more than five times from 1995 to 2006, from 0.8 PC per 100 inhabitants to 4.6, according to ITU (Figure 5.2, dotted gray line). However, the country's PC penetration rates pale in comparison to those displayed by Israel (122.5%), Canada (87.3%) and Switzerland (86.2%), the highest ranked countries in this respect. PC penetration rates are also significantly lower than in most countries in the region, notably Estonia (48.9%), Slovenia (41.1%), Poland (24.0%), Hungary (14.9%) and Russia (12.1%). Indeed, Ukraine was ranked a disappointing 80th out of 127 countries in 2006 in this regard. The key role played by PC penetration rates in providing the necessary infrastructure for Internet usage and diffusion throughout the society and in doing business illustrates the magnitude of the challenges facing the country in this respect.

As a result, Internet penetration rates are still far behind the world's best levels, with 12.1 Internet users per 100 inhabitants in 2006 according to ITU, corresponding to a 76th rank out of 127 countries. To put these numbers in context: the Netherlands, New Zealand and Sweden, which displayed the highest penetration rates in the same year, had respectively 88.9, 78.8 and 77.0 Internet users per 100 population. In the region, Estonia, Hungary, the Czech Republic and Romania, among others, presented respectable penetration rates of 57.4%, 34.7%, 34.7% and 32.4% respectively.

However, this should not overshadow the stellar increase in Internet users observed in the last decade in Ukraine, considering only 0.04 people per 100 population used the Internet in 1995 (see Figure 5.2, dashed blue line). Additional meaningful upsurges are limited in scope by the under-developed fixed line infrastructure and by the relative small pool of PCs present in the country. In particular, the former is an important obstacle considered that the dial up connection is still the dominant modality of Internet access in the country.[6]

This progress in ICT diffusion has been accompanied by an increased focus in the national agenda, particularly since 2005, on the adoption of the necessary structural reforms to complete the transition towards a market based economy, improving also the efficiency and transparency of the environment to do business in the country. Despite the political instability witnessed in recent years, extensive privatization programmes have been implemented together with some rationalization of the tax system. Simplification of the administrative procedures has resulted in less red tape and has started to have an impact upon the size of the large informal market. Here, too, the privatization of Ukrtelecom is expected to increase the efficiency in the provision of ICT services and ultimately have an important impact on ICT diffusion in the country.

A more business friendly environment is likely to stimulate private national and foreign investors to invest their capital in Ukraine, with the consequent positive externalities in terms of technology and management skills transfer, and job creation to name a few. In this respect, FDI, after a significant drop in 1999, has resumed its upward trend starting from 2000, reaching US$ 5.2 million in 2006 or 21% of gross fixed capital formation, as compared to an annual average of US$ 0.4 million (or 4.9% of gross fixed capital formation) over the 1990 to 2000 period.[7]

At the same time, Ukraine is increasingly becoming one of the most attractive outsourcing destinations in Europe thanks to its low labor cost, skilled human resources and large internal market. Global Offshore Associates Limited found that the value of Ukraine's IT outsourcing sector alone rose by 47% in 2006, reaching an estimated value of €179 million, or €436 million taking into account the informal sector.[8]

5.3 The NRI 2007-2008: A comprehensive assessment of Ukraine's networked readiness

Having briefly referenced the main recent trends in ICT penetration in Ukraine, what follows is a more detailed and in depth analysis of the country's capacity and potential to leverage ICT for increased competitiveness as measured by the NRI.

This section draws heavily on the findings of the latest NRI computation, featured in *The Global Information Technology Report 2007-2008*, to assess Ukraine's current performance. Comparisons with a number of neighboring and/or otherwise relevant countries/regions,[9] as well as Ukraine's inter-temporal comparisons for the six-year NRI time series will be included in the analysis to set Ukraine's progress and challenges ahead in the proper benchmarking context.

Tables 5.1 to 5.4 show the scores and ranks for Ukraine and selected comparator countries with respect to the overall NRI 2007-2008, its three components, and its nine pillars. Figure 5.3 provides a snapshot of Ukraine's performance in the NRI 2007-2008 and Figure 5.4 illustrates Ukraine's evolution in the NRI rankings from 2002 to 2007, within the 2002 sample of 82 countries.

Figure 5.3 Ukraine's performance in the NRI 2007-2008

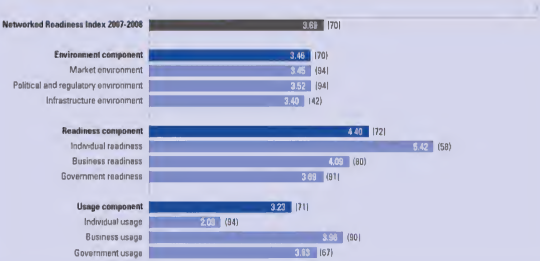
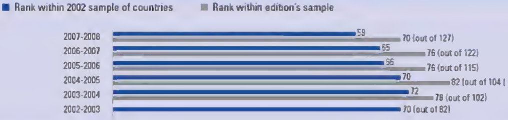


Figure 5.4 Ukraine's historical ranking in the NRI



As can be seen in Table 5.1, Ukraine positions itself 70th out of 127 economies in the NRI 2007-2008, with an overall score of 3.69, roughly in the middle of the global rankings, and clustering with countries as heterogeneous as El Salvador (66th), Azerbaijan (67th), Russia (72nd), Morocco (74th), the Dominican Republic (75th), Vietnam (73rd) and Indonesia (76th).

Table 5.1 shows how the country is outdone by the totality of the selected comparators in overall networked readiness, with the partial exception of Russia whose performance is broadly aligned with that of Ukraine. The remaining comparators rank among the top 60, with Israel (18th), Estonia (20th) and, to a lesser extent, Hungary (37th) providing examples of how to fully benefit from ICT and innovation. When comparing Ukraine's showing with the regional averages, there is a noticeably large gap yet to be filled with the EU 15 (5.02) and even with EU Accession 12 (4.26). At the same time, Ukraine outperforms the CIS regional average (3.40) by a fairly significant margin.

Partially offsetting the above, Figure 5.4 introduces some elements of optimism to the picture drawn by Table 5.1, outlining important progress that has been made in the country's networked readiness (as captured by the NRI model) over time with an 11-position improvement in a 2002 constant sample of countries. After a slight drop in 2003-2004, Ukraine's networked readiness has followed a sustained upward trend, no doubt boosted by a surge in ICT penetration rates within the country, as well as by an increased awareness within the government and among all of the social actors on the importance of ICT as a key tool for competitiveness and long-term growth.

Going back to Ukraine's current networked readiness levels and looking more in depth at the different dimensions assessed by the NRI, a number of trends can be highlighted from Figure 5.3:

- At the subindex level, Ukraine is significantly more successful in readiness (4.40) than usage (3.23) and, to a lesser extent, market environment (3.46). In particular, usage stands out as the weakest area in the country's overall performance. This is not surprising in view of the analysis conducted earlier in this chapter with regard to ICT penetration levels, except for the high mobile penetration rate. On a more positive note, it is encouraging to note the rather good marks the country gets for the general preparedness of its main

Table 5.1 Performance of selected countries/regions in the NRI 2007-2008 and its components

	NRI 2007-2008		A. Environment component		B. Readiness component		C. Usage component	
Country/Economy	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Israel	5.18	18	4.97	19	5.57	14	4.99	18
Estonia	5.12	20	4.66	24	5.44	23	5.27	8
Malaysia	4.82	26	4.57	26	5.61	11	4.28	28
Hungary	4.28	37	4.18	32	4.84	39	3.81	38
Croatia	4.06	49	3.73	52	4.82	42	3.64	48
India	4.06	50	3.73	54	4.94	37	3.53	51
Turkey	3.96	55	3.79	51	4.56	61	3.52	52
China	3.90	57	3.51	66	4.70	54	3.50	54
Mexico	3.90	58	3.54	62	4.53	63	3.61	49
Poland	3.81	62	3.61	58	4.51	65	3.30	63
Ukraine	**3.69**	**70**	**3.46**	**70**	**4.40**	**72**	**3.23**	**71**
Russian Federation	3.68	72	3.53	64	4.46	67	3.04	84
EU 15	5.02		4.82		5.43		4.81	
EU Accession 12	4.26		4.01		4.87		3.91	
CIS	3.40		3.29		4.07		2.84	

Table 5.2 Performance of selected countries/regions in the environment component

	A. Environment component		Market environment		Political & regulatory environment		Infrastructure environment	
Country/Economy	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Israel	4.97	19	5.18	8	5.06	25	4.66	13
Estonia	4.66	24	4.78	23	5.18	24	4.02	24
Malaysia	4.57	26	4.97	18	5.32	21	3.42	41
Hungary	4.18	32	4.27	38	4.46	40	3.83	28
Turkey	3.79	51	4.06	51	4.35	44	2.96	60
Croatia	3.73	52	3.87	61	3.97	63	3.36	44
India	3.73	54	4.09	49	4.26	47	2.82	71
Poland	3.61	58	3.72	74	3.58	90	3.54	38
Mexico	3.54	62	3.96	57	3.83	70	2.84	67
Russian Federation	3.53	64	3.52	88	3.54	92	3.53	39
China	3.51	66	3.79	69	4.15	58	2.58	86
Ukraine	**3.46**	**70**	**3.45**	**94**	**3.52**	**94**	**3.40**	**42**
EU 15	4.82		4.73		5.32		4.41	
EU Accession 12	4.01		4.11		4.31		3.60	
CIS	3.29		3.41		3.62		2.84	

stakeholders to use ICT in their day-to-day activities, which represents a good basis for usage to build on.

- With regard to specific performance per pillar of networked readiness, individual readiness (5.42) outdoes by far all other dimensions, pointing to a remarkable interest and degree of preparation of the society to use technologies. This interest and degree of preparation is also attributable to the excellent scores obtained by the quality of math and science education (4.59). Among the other fairly successful areas, noteworthy are business readiness (4.09), business usage (3.96) and government readiness (3.69). In particular, the business sector seems to be at the moment the only stakeholder whose preparedness to use ICT has translated into a relatively high degree of actual usage. This contrasts quite strikingly with the scarce levels of individual usage (2.09), indeed the lowest scoring dimension among the nine pillars included in the NRI.
- The environment subindex (3.46) appears to be the most homogeneous across all its three pillars, with a very similar assessment in market environment (3.45) and infrastructure (3.40), and a marginally better score for the regulatory/political environment (3.52).

The rest of this section will explore the above trends through a more in-depth assessment of Ukraine's performance in each dimension considered by the NRI. Full details on scores and rankings for Ukraine for each variable included in the NRI are to be found in Annex II, at the end of this chapter.

The environment component

A business friendly and ICT conducive environment is a necessary precondition for a country's stakeholders to leverage ICT in their daily activities, therefore enhancing national competitiveness. This is true not only for the

Table 5.3 Performance of selected countries/regions in the readiness component

	B. Readiness component		Individual readiness		Business readiness		Government readiness	
Country/Economy	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Malaysia	5.61	11	6.10	22	5.38	18	5.36	7
Israel	5.57	14	6.12	18	5.52	14	5.08	17
Estonia	5.44	23	6.03	26	4.93	30	5.36	8
India	4.94	37	5.62	46	4.98	27	4.23	45
Hungary	4.84	39	5.67	42	4.61	47	4.26	44
Croatia	4.82	42	5.65	44	4.70	44	4.11	54
China	4.70	54	5.42	59	4.35	58	4.32	42
Turkey	4.56	61	5.31	63	4.41	52	3.96	65
Mexico	4.53	63	5.20	67	4.28	64	4.12	53
Poland	4.51	65	5.55	51	4.35	59	3.62	96
Russian Federation	4.46	67	5.45	56	4.23	69	3.70	89
Ukraine	**4.40**	**72**	**5.42**	**58**	**4.09**	**80**	**3.69**	**91**
EU 15	5.43		6.07		5.33		4.90	
EU Accession 12	4.87		5.78		4.56		4.28	
CIS	4.07		4.75		3.80		3.66	

Table 5.4 Performance of selected countries in the usage component

	C. Usage component		Individual usage		Business usage		Government usage	
Country/Economy	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Estonia	5.27	8	4.56	11	5.29	23	5.96	2
Israel	4.99	18	4.43	13	5.86	9	4.67	26
Malaysia	4.28	28	2.52	45	5.36	22	4.97	16
Hungary	3.81	38	2.81	38	4.81	41	3.81	54
Croatia	3.64	48	2.69	41	4.56	52	3.67	62
Mexico	3.61	50	1.89	62	4.39	63	4.55	29
India	3.53	51	1.20	109	5.18	26	4.21	40
Turkey	3.52	52	2.00	57	4.80	43	3.77	56
China	3.50	54	1.60	80	4.47	59	4.45	34
Poland	3.30	63	2.66	42	4.28	70	2.96	103
Ukraine	**3.23**	**71**	**2.09**	**54**	**3.96**	**90**	**3.63**	**67**
Russian Federation	3.04	84	2.09	53	4.04	87	2.99	101
EU 15	4.81		4.27		5.44		4.72	
EU Accession 12	3.91		3.06		4.68		3.98	
CIS	2.84		1.53		3.82		3.17	

market environment for businesses, but also for the regulatory framework and hard and soft infrastructure in place in a country.

Ukraine displays a fairly even performance across the three dimensions, with an average score of 3.46 for the environment subindex, corresponding to 70th position out of the 127 countries covered in the NRI 2007–2008. This points to the rather large room for improvement across all the pillars and to the need for further reforms. It also points to the need for an increased emphasis on the market (3.45) and political/regulatory (3.52) environment dimensions, which both rank 94th in the sample.

Market environment

The market environment pillar captures the openness of the general business environment for ICT development, taking into account the presence of appropriate sources of financing (especially venture capital, key for fostering innovation through financing start-ups and risky enterprises in general), the extent of business sophistication and innovation potential (looking at variables such as the state of cluster development, ICT exports, and the number of utility patents), the ease of doing business, the freedom of the press (to account for the degree to which information can freely flow on the web), as well as the extent of convergence among the different ICT related industries and the consequent accessibility of digital content.

In the case of Ukraine, elements of relative strength with respect to the sample can be found in the availability of venture capital (56th), the number of utility patents (56th), the percentage of ICT exports (58th) as well as the number of days required to start a business (59th). One caveat must be added here regarding the number of utility patents and for ICT exports: in both cases most countries in the sample tend to cluster around low values, with a few outliers at the upper end. This means that Ukraine with 0.5 utility patents per capita and with 2% ICT exports out of its total exports is still ranked quite well in the two variables, even if in absolute terms the latter are rather mediocre values. In this regard, a look at the absolute numbers of utility patents registered by the United States (298.4), Japan (287.1) or Taiwan, China (226.9) and the ones for ICT exports registered by the Philippines (58.4%), Taiwan, China (44.6%) or Malaysia (35.6%) highlights the room for improvement that remains.

In terms of the ease to start a business in the country, although the recent progress realized in streamlining administrative procedures and cutting red tape have reduced the number of days to start a business to 27 and of administrative procedures to 10, these two elements are respectively ranked 59th and 74th in the sample. Government regulations are still assessed by Ukrainian business leaders as being quite burdensome, 101st overall. The tax system also appears to be a major hindrance for doing business in the country, as its 119th rank for the extent and effect of taxation and its 100th rank for total tax rate (57.3% of profits) seem to suggest.

Table 5.2 shows that the Ukrainian market environment, at 94th, is the worst among the selected comparators, which are in a different class, with the exception of Russia (88th). The third worst ranked country, Poland, at 74th, is 20 ranks ahead of Ukraine. Moreover, the country's score in this pillar (3.45) is lower than both the EU 15 (4.73) and EU Accession 12 (4.11) regional averages, and only marginally better than that of the CIS (3.41).

Political and regulatory environment

This pillar aims at assessing the quality and fairness of public institutions and of the regulatory framework, both general and ICT specific, for businesses and individuals. Dimensions considered include the efficiency of the legal framework and law-making bodies, the protection of property rights and intellectual property, the ease of enforcing contracts, the development of ICT laws, and the quality of institutions in the Internet service providers (ISP) sector, among others.

Ukraine is ranked quite poorly, at 94th, in this pillar, with the partial exception of the number of procedures (15th) and time (25th) to enforce a contract.[10]

The country seems to still be lagging behind in terms of the quality of its institutions and fairness of the legal framework, being ranked among the worst countries in the world for the effectiveness of its parliament (106th), judicial independence (107th), intellectual property protection (107th), property rights (115th), and the efficiency of the legal framework (108th). Interestingly, the country gets relatively better marks in the ICT specific legal framework, ranking 80th for the degree of development and enforcement of laws relating to ICT, including electronic commerce, digital signature and consumer protection.

In addition, the low degree of competition among ISPs in the country does not appear to ensure high quality, infrequent interruptions and low prices (109th overall). This mirrors the hard data on Internet penetration and diffusion analysed above, and confirms the relative underdevelopment of the Internet sector.

It is worth noting that Ukraine is ranked last in the group of selected comparators (see Table 5.2), in the same class as Russia (92nd) and Poland (90th), and quite far behind the rest (Mexico, the fourth lowest ranked is 70th). With a score of 3.52, the country is also underperforming the regional averages of the EU 15 (5.32), EU Accession 12 (4.31), and CIS (3.62).

Infrastructure environment

This pillar gauges the state of ICT hard infrastructure and the existence of ICT-conducive soft infrastructure in a country. Elements such as telephone lines, Internet servers, and electricity production are combined with variables capturing the available pool of qualified human resources for the ICT sector, such as the availability of scientists and engineers, the quality of the scientific research institutions, the tertiary enrolment rates and education expenditure.

Ukraine gets satisfactory marks for the quality of its infrastructure environment, ranked 42nd in the sample. Its performance is notably boosted by high tertiary enrolment rates (16th) and levels of education expenditure (4.41% of the GDP in 2005, corresponding to 51st position), and a relatively large pool of scientists and engineers (69th). This does not come as a surprise in view of the country's tradition of scientific excellence and strong focus on education.

This is confirmed by a look at Ukraine's performance within the group of selected comparators. In contrast with what is observed for the other two environment pillars, in the infrastructure pillar, the country is ranked in the middle of the sample, clustered with countries like Malaysia (41st), Russia (39th) and Poland (38th) and outperforming by far China (86th, the worst performer), India (71st), and Mexico (67th). Moreover, although the country at 3.40 still lags behind the EU 15 regional average (4.41), it almost matches the EU Accession 12 average (3.60), and largely surpasses that of the CIS (2.84).

The readiness component

Once the appropriate environment for ICT is in place, the potential for a country to fully benefit from ICT depends on the action of its main social actors, in particular on their preparedness and interest in using ICT in their daily activities. The overall readiness of a country depends on a combination of factors, such as human skills for using ICT, access and affordability of ICT for companies, and the extent to which the government has a vision for ICT, as well as a strategy in place to facilitate its diffusion.

As noted above, Ukraine shows a considerable variation in the readiness of the three main stakeholders, with the individuals leading the government and, to a lesser extent, the business sector. Ukraine is ranked 58th (with a score of 5.42) for individual readiness, but only 91st (with a score of 3.69) and 80th (with a score of 4.09) for government and business readiness, respectively. This results in an overall rank of 72 for the pillar.

Individual readiness

The individual readiness pillar aims at capturing the propensity of individuals within a country to use ICT in their day-to-day life as well as their degree of preparation in doing so. To this end, the presence of the appropriate education skills, together with the extent of access to ICT and the affordability of telephone and Internet connections are taken into consideration, looking at variables such as the quality of the educational system (with a special emphasis on math and science education), the availability of Internet access in schools, the cost of mobile telephony and residential telephone connection charges, as well as telephone and broadband subscription charges.

Quite predictably, Ukraine performs well for the quality of its educational system (45th) and for the quality of math and science education (42nd). On a more negative note, Internet access at schools is not as extensive as it should be (at 77th), representing a deficiency that should be addressed to provide students with access to the resources available on the Internet.

High speed monthly subscription costs as a percentage of monthly GDP per capita, as well as the lowest sampled cost of broadband as a percentage of monthly income, are ranked as relatively affordable, at 53rd and 54th respectively, which bodes well in terms of further ICT penetration potential.

However, despite the high penetration rates, the cost of mobile calls is still assessed as being quite high (85th), compared to international standards; the same applies to the residential telephone connection charge (73rd) and monthly subscription (66th).

The inter-country/regional comparison in Table 5.3 confirms the relatively high degree of individual preparation within the country. Ukraine ranks higher than Mexico (87th), Turkey (63rd) and China (59th), and not much lower than Russia (56th) and Poland (51st). However, at 5.42, it still largely lags behind the average scores of EU 15 (6.07) and EU Accession 12 (5.78), while it outdoes the CIS (4.75).

Business readiness

This pillar looks at the preparedness of companies to fully incorporate ICT into their operations and strategies, taking into account the availability of a properly trained labor pool, the extent of R&D spending by the private sector, the presence of a strong link between academia and industry, the quality and quantity of suppliers and the affordability of telecommunications services for companies, as well as the levels of ICT imports to meet the country's ICT needs.

Ukraine's performance on business readiness is quite mixed. The country appears to have fairly efficient university/industry collaboration (63rd), a large enough number of suppliers (64th), and rather affordable business monthly subscription charges (66th). At the same time, it gets mediocre marks for the quality of training (96th for the extent of staff training and 83rd for the local availability of research and training services), and for the affordability of business telephone connections, ranked 92nd.

This underscores the need to invest in training the labor pool and to make further efforts to ensure greater affordability of telecommunications services for the business sector, as well as for the general public. The ongoing privatization process should help the country to move in this direction.

The inadequate business readiness of the country is also highlighted by the comparison made in Table 5.3. Again, Ukraine at 80th ranks last within the selected comparator group, with a 10-position gap with respect to the second worst ranked country, Russia (69th) and a 61-position gap with respect to the top performer, Malaysia (18th). Furthermore, although it surpasses the CIS regional average (3.80), with a score of 4.09, there remains a long way to go to catch up with the EU 15 (5.33) and the EU Accession 12 (4.56).

Government readiness

The government readiness pillar aims at capturing government prioritization of ICT in the national agenda. It also captures the extent to which the government has a clear and coherent vision to promote ICT diffusion as a tool for enhanced competitiveness. A number of variables are taken into account, including specifically assessing the degree of ICT prioritization, the government's vision for the future, looking at government procurement of high tech products and e-government.

The picture drawn for Ukraine by this pillar is rather bleak: with an overall 91st position, the government emerges as the least "ready" for ICT among the national actors. In particular, government prioritization of the sector and its vision of the importance of ICT diffusion for the future are perceived by the Ukrainian business community as almost non-existent, ranked at 112th and 116th, respectively. Furhter, government procurement of high tech products seems to be based more on price than technical performance and innovativeness (74th), therefore missing an opportunity to promote excellence and quality among high tech goods producers.

The minor role assigned to ICT in the national agenda is a serious shortcoming in the country's development strategy and does not bode well for the prospects of higher ICT penetration and for increased competitiveness and growth. The examples of Singapore, Israel and Estonia demonstrate how a long-term government strategy and vision of ICT importance have been instrumental in achieving extraordinary levels of networked readiness in relatively short periods of time. Box 3.9.1 in Chapter 3 describes Estonia's success story in more detail.

Within the comparator group, Ukraine is ranked second to last, only ahead of Poland (96th). The contrast is particularly striking if one compares Ukraine's poor 91st position with successful networked economies, such as Malaysia (7th), Estonia (8th) and Israel (17th). Similarly, the gap with the EU 15 (4.90) and the EU Accession 12 (4.28) regional averages is still quite wide; the country, at 3.69, barely outperforms the CIS average (3.66).

The usage component

The last component of the networked readiness framework assesses the actual degree of ICT usage by the three principal stakeholders in a given country: individuals, the business sector and the government. It attempts to provide a glimpse of the potential efficiency and productivity gains associated with ICT adoption by the key social actors.

As observed above, the usage component with a score of 3.23 and a global rank of 71st appears as the weakest area in Ukraine's networked readiness performance, pointing to the huge challenges ahead if the country is to fully leverage ICT in the near future.

Another feature worth noting is the rather large difference in score between business usage (3.96) and individual usage (2.09), suggesting a digital divide within the civil society between businesses and individuals. Interestingly enough, this gap is almost reversed when one looks at the rankings for these two pillars, whereby individual usage gets an overall rather satisfactory 54th position and business usage is ranked a low 90th. This suggests a worldwide trend towards higher levels of business as opposed to individual usage, which explains Ukraine's relatively better ranking. Despite the relatively favorable rank, Ukraine should work towards boosting the individual usage of ICT.

Individual usage

Individual usage provides insight into the actual rates of ICT diffusion among the individuals in a given country by taking as a proxy the subscription data for mobile phones, broadband Internet, the number of PCs and Internet users, as well as the total Internet bandwidth capacity.

Keeping in mind the note of caution about globally lower levels of individual usage, Ukraine's performance is particularly boosted by the remarkable level of mobile telephony penetration (22nd in the world). As already discussed, in 2006 Ukraine reached universal coverage, with a penetration rate of 106.72% for mobile telephony. If this is a development to be commended, it also implies that penetration rates are unlikely to increase much further in the near future and that the incumbents should now concentrate on improving the quality and lowering the costs of the services offered.

The more specifically information technologies penetration side appears to be weaker, with relatively few PCs per capita (80th) and Internet users (76th), as well as a poor Internet bandwidth capacity (95th).

Despite its rather unsatisfactory score with an overall rank of 54, the country outperforms most of the countries in the comparator group, some by a large margin: India (109th), China (80th), Mexico (62nd) and Turkey (57th) all lag behind Ukraine in individual usage. However, a look at the EU 15 (4.27) and, to a lesser extent, the EU Accession 12 (3.06) averages demonstrates quite clearly the magnitude of the digital divide between most of their members and Ukraine, with a score of 2.09.

Business usage

The business usage pillar examines the extent of innovation and technology absorption in the business sector together with the quality of telecommunications infrastructure for firms and their ICT usage. This last concept is captured by a variable measuring the extent of Internet usage in firms' interactions with customers and suppliers. Businesses that largely use ICT in their daily operations, by being able to rely on efficient ICT infrastructure, generate and/or efficiently absorb innovation, which boosts national competitive potential and long-term prosperity.

In terms of technology absorption, the prevalence of foreign licensing is assessed as quite modest for Ukrainian firms (111th), probably also in light of the limited FDI which has entered the country in recent years. Further, firms are perceived as not very successful in absorbing technology. This represents an area of concern for a country such as Ukraine, which given its relatively basic stage of development, could still greatly benefit from adopting and adapting technology coming from external sources into its production sector. It is hoped that the recent upward trend observed for FDI will continue and reinforce itself, bringing with it positive externalities such as technology and management skills transfer. The national business community has a major role to play in this process, thereby ensuring that FDI is indeed a tool of development and increased productivity.

Interestingly, the innovation capacity of Ukrainian firms is ranked quite high at 40th, which bodes well for the preparedness of the country to evolve into more advanced stages of development where the generation of endogenous technology will become essential for continued growth.

The quality of the telephone infrastructure for business is perceived as being very poor at 101st, while firms do not appear to resort to Internet extensively for their business transactions. This is not surprising in view of the relatively low Internet penetration, insufficiently defined and enforced ICT related laws and property rights, and the rather underdeveloped banking sector.

Once compared with the selected comparators' performance, Ukraine's business usage at 90th lags behind the entire sample, with the partial exception of Russia (87th). The gap with the EU 15 (5.44) and, to a lesser extent, EU Accession 12 (4.68) remains large, confirming the mediocre performance of the country from an international perspective.

Government usage

The government usage pillar aims at assessing the degree of ICT usage by the government as well as the extent to which it has implemented its digital agenda. It also captures dimensions such as the government's success in promoting ICT usage, the development of e-government services, and the extent to which ICT has improved government productivity, among others.

Predictably, given the mediocre ICT readiness displayed by the government (91st), Ukraine with a fairly low score of 3.63 is ranked 67th in this specific pillar, confirming its rather underdeveloped digital agenda and the related low priority given to ICT diffusion in the national strategy. On a less negative note, comparing the government performance with the other two stakeholders in ICT usage, it is largely outdoing individual usage (2.09), although it is surpassed by the business sector (3.96).

In particular, the government is perceived among the least effective in the world in promoting ICT usage and diffusion (107th), while the presence of ICT in government offices is rather rare (104th) and does not seem to have contributed to improving government productivity (91st). E-government services do not appear to be very developed either, at 81st.

With respect to the selected comparators, with the exception of stragglers such as Russia (101st), and Poland (103rd), Ukraine lags behind the rest of the sample with an 11-position gap with Turkey (56th), the fourth lowest ranking country in government readiness. Also, compared to the regional averages of EU 15 (4.72) and EU Accession 12 (3.98), Ukraine has a rather long way to go to catch up with its European peers.

5.4 Conclusions

This chapter has underlined the significant progress realized in recent years by Ukraine in ICT penetration, demonstrated by the 11-position improvement registered in the NRI over the 2002 to 2007 period. Nevertheless, many challenges remain ahead for the country to fully leverage and benefit from the opportunities offered by ICT. The analysis has shown that Ukraine still lags behind the comparator countries, especially the EU averages, in most of the dimensions defining networked readiness.

In particular, an effort is required to improve the usage levels of individuals, notably by lowering the cost of ICT and improving the quality of ICT access. It is noteworthy that the country displays a remarkable level of individual readiness, pointing to a high degree of preparedness and interest in using ICT by civil society, which could be translated into higher levels of usage once ICT access is made cheaper.

At the same time, despite recent market reforms, the regulatory environment for doing business needs to be improved by further cutting red tape and government inefficiencies and enhancing public governance. This would result in a more favorable environment and a more certain regulatory framework for investors to engage their capital in the country, which would spin off positive externalities in terms of job creation, technology and management skills transfer, and ultimately increased economic growth.

Finally, this analysis has highlighted the need for the government to engage more actively in ICT promotion and usage by designing a digital agenda aimed at making ICT accessible to all and putting in place e-government services, among others. The experience of the most successful networked economies demonstrates that a key element for a country to fully leverage the potential benefits for ICT diffusion is a government firmly convinced of the centrality of technology and innovation for enhancing national competitiveness. The government must also be committed to promoting ICT diffusion.

At the same time, Ukraine is a country of great potential, thanks to its well-educated labor force and large market. This potential must and can be fulfilled by a joint commitment and effort of the government, businesses, and civil society towards a more networked society and a more competitive and prosperous economy.

Notes

1 For more information on the EOS 2007, see Browne and Geiger 2007.

2 According to Jennex and Amoroso 2002, Ukraine produced four times the output of the next ranking republic.

3 According to the UNECE 2003, the economic decline experienced by the country in the nineties has been quantified as having had double the impact and a three-fold longer duration than the 1929 Great Depression.

4 The case of Estonia is quite notable in this sense. Under the visionary leadership of Maart Laar, the country tremendously progressed in networked readiness in a 10-to-15 year period, making it one of the main pillars of its competitiveness strategy and using ICT penetration and diffusion as an enabling tool of economic transformation and better living conditions. For a full account of Estonia's story, see Dutta 2007.

5 According to the EIU 2007, it is expected to remain one of the fastest growing markets in the region over the next five years.

6 Ukraine displays limited broadband subscription rates, with only 1.37 broadband Internet subscribers per 100 inhabitants in 2006, corresponding to a 62nd position in the overall sample. Broadband use is expected to expand in the urban centers in the medium term also due to the significant rise local call charges for dial up connections have undergone in 2006 but dial up is bound to remain the dominant connection modality for the country at large.

7 UNCTAD 2007.

8 Quoted in Ukrainian Hi-Tech Initiative 2007.

9 The list of comparators chosen for this chapter broadly corresponds to the one used elsewhere in this Report. China, Croatia, Estonia, Hungary, India, Israel, Malaysia, Mexico, Poland, Russian Federation, Turkey and the regional averages for EU15, EU Accession 12 and the Commonwealth of Independent States (CIS). Israel has been included as the country, like Estonia and Hungary, represents a success story in terms of leveraging ICT for increased development and competitiveness.

10 In absolute terms, it still takes as many as 354 days to enforce a contract in Ukraine.

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Annex A: Technical composition and computation of the Networked Readiness Index 2007-2008

The Networked Readiness Index 2007-2008 separates environmental factors from ICT readiness and usage, and is composed of three subindexes. Each subindex is further divided into three pillars. The 68 ICT-related variables used in the computation of the NRI are then distributed among the nine pillars.

Networked Readiness Index

Networked Readiness Index = 1/3 Environment Component
+ 1/3 Readiness Component
+ 1/3 Usage Component

Environment Component

Environment subindex = 1/3 Market environment
+ 1/3 Political and regulatory environment
+ 1/3 Infrastructure environment

Pillar 1: Market Environment

1.01 Availability of venture capital
1.02 Financial market sophistication
1.03 Technological readiness
1.04 State of cluster development
1.05 US utility patents (hard data)
1.06 High-tech exports (hard data)
1.07 Burden of government regulation
1.08 Extent and effect of taxation
1.09 Total tax rate (hard data)
1.10 Time required to start a business (hard data)
1.11 Number of procedures required to start a business (hard data)
1.12 Intensity of local competition
1.13 Freedom of press
1.14 Accessibility of digital content

Pillar 2: Political and Regulatory Environment

2.01 Effectiveness of law-making bodies
2.02 Laws relating to ICT
2.03 Judicial independence
2.04 IP protection
2.05 Efficiency of legal framework
2.06 Property rights
2.07 Quality of competition in the ISP sector
2.08 Number of procedures to enforce a contract (hard data)
2.09 Number of days to enforce a contract (hard data)

Pillar 3: Infrastructure Environment

3.01 Telephone lines (hard data)
3.02 Secure Internet servers (hard data)
3.03 Electricity production (hard data)
3.04 Availability of scientists and engineers
3.05 Quality of scientific research institutions
3.06 Tertiary enrolment (hard data)
3.07 Education expenditure (hard data)

Readiness Component

Readiness subindex = 1/3 Individual Readiness
+ 1/3 Business Readiness
+ 1/3 Government Readiness

Pillar 4: Individual Readiness

4.01 Quality of math and science education
4.02 Quality of the educational system
4.03 Internet access in schools
4.04 Buyer sophistication
4.05 Residential telephone connection charge (hard data)
4.06 Residential monthly telephone subscription (hard data)
4.07 High-speed monthly broadband subscription charge (hard data)
4.08 Lowest cost of broadband (hard data)
4.09 Cost of cellular phone call (hard data)

Pillar 5: Business Readiness

5.01 Extent of staff training
5.02 Local availability of specialized research and training services
5.03 Quality of management schools
5.04 Company spending on research and development
5.05 University/industry research collaboration
5.06 Business telephone connection charge (hard data)
5.07 Business monthly telephone subscription (hard data)
5.08 Local supplier quality
5.09 Local supplier quantity
5.10 Computer, communications and other services imports (hard data)

Pillar 6: Government Readiness

6.01 Government prioritization of ICT
6.02 Government procurement of advanced technology products
6.03 Importance of ICT to government's vision of the future,
6.04 E-Government Readiness Index (hard data)

Usage Component

Usage subindex = 1/3 Individual Usage
+ 1/3 Business Usage
+ 1/3 Government Usage

Pillar 7: Individual Usage

7.01 Cellular telephones (hard data)
7.02 Personal computers (hard data)
7.03 Broadband Internet subscribers (hard data)
7.04 Internet users (hard data)
7.05 Internet bandwidth (hard data)

Pillar 8: Business Usage

8.01 Prevalence of foreign technology licensing
8.02 Firm-level technology absorption
8.03 Capacity for innovation
8.04 Availability of new telephone lines
8.05 Extent of business Internet use

Pillar 9: Government Usage

9.01 Government success in ICT promotion
9.02 Availability of online services
9.03 ICT use and government efficiency
9.04 ICT pervasiveness
9.05 E-Participation Index

Annex B: Ukraine's country profile

Below is Ukraine's country profile taken from *The Global Information Technology Report 2007-2008.*

Key indicators

Population (millions), 2006	46.0
Gross domestic product (PPP, US$) per capita, 2006	7,831.9
Internet users (per 100 inhabitants), 2006	12.1
Internet bandwidth (Mbps per 10,000 inhabitants), 2006	0.2

Networked Readiness Index

Year (number of economies)	Rank
2007-2008 (127)	**70**
2006-2007 (122)	75
2005-2006 (115)	76
Global Competitiveness Index 2007-2008 (131)	73

Environment Component 70

Market environment		**94**
1.01	Venture capital availability, 2007	56
1.02	Financial market sophistication, 2007	88
1.03	Availability of latest technologies, 2007	95
1.04	State of cluster development, 2007	86
1.05	Utility patents*, 2006	56
1.06	High-tech exports*, 2005	58
1.07	Burden of government regulation, 2007	101
1.08	Extent and effect of taxation, 2007	119
1.09	Total tax rate*, 2007	100
1.10	Time required to start a business*, 2007	59
1.11	Number of procedures required to start a business*, 2007	74
1.12	Intensity of local competition, 2007	92
1.13	Freedom of the press, 2007	77
1.14	Accessibility of digital content, 2007	73
Political and regulatory environment		**94**
2.01	Effectiveness of law-making bodies, 2007	106
2.02	Laws relating to ICT, 2007	80
2.03	Judicial independence, 2007	107
2.04	Intellectual property protection, 2007	107
2.05	Efficiency of legal framework, 2007	108
2.06	Property rights, 2007	115
2.07	Quality of competition in the ISP sector, 2007	109
2.08	Number of procedures to enforce a contract*, 2007	15
2.09	Time to enforce a contract*, 2007	25
Infrastructure environment		**42**
3.01	Number of telephone lines*, 2006	47
3.02	Secure Internet servers*, 2006	85
3.03	Electricity production*, 2004	50
3.04	Availability of scientists and engineers, 2007	69
3.05	Quality of scientific research institutions, 2007	58
3.06	Tertiary enrollment*, 2005	16
3.07	Education expenditure*, 2005	51

Readiness Component 72

Individual Readiness		**58**
4.01	Quality of math and science education, 2007	42
4.02	Quality of the educational system, 2007	45
4.03	Internet access in schools, 2007	77
4.04	Buyer sophistication, 2007	80
4.05	Residential telephone connection charge*, 2006	73
4.06	Residential monthly telephone subscription*, 2006	66
4.07	High-speed monthly broadband subscription*, 2006	53
4.08	Lowest cost of broadband*, 2006	54
4.09	Cost of mobile telephone call*, 2005	85
Business Readiness		**80**
5.01	Extent of staff training, 2007	96
5.02	Local availability of research and training services, 2007	83
5.03	Quality of management schools, 2007	82
5.04	Company spending on R&D, 2007	66
5.05	University-industry research collaboration, 2007	63
5.06	Business telephone connection charge*, 2006	92
5.07	Business monthly telephone subscription*, 2006	66
5.08	Local supplier quality, 2007	78
5.09	Local supplier quantity, 2007	64
5.10	Computer, communications, and other services imports*, 2005	61
Government Readiness		**91**
6.01	Government prioritization of ICT, 2007	112
6.02	Gov't procurement of advanced tech products, 2007	74
6.03	Importance of ICT to government vision of the future, 2007	116
6.04	E-Government Readiness Index*, 2007	41

Usage Component 71

Individual Usage		**54**
7.01	Mobile telephone subscribers*, 2006	22
7.02	Personal computers*, 2006	80
7.03	Broadband Internet subscribers*, 2006	62
7.04	Internet users*, 2006	76
7.05	Internet bandwidth*, 2005	95
Business Usage		**90**
8.01	Prevalence of foreign technology licensing, 2007	111
8.02	Firm-level technology absorption, 2007	90
8.03	Capacity for innovation, 2007	40
8.04	Availibility of new telephone lines, 2007	101
8.05	Extent of business Internet use, 2007	76
Government Usage		**67**
9.01	Government success in ICT promotion, 2007	107
9.02	Availability of government online services, 2007	81
9.03	ICT use and government efficiency, 2007	91
9.04	Presence of ICT in government offices, 2007	104
9.05	E-Participation Index*, 2007	14

* Hard data

CHAPTER 6

Measuring Ukraine's Travel & Tourism Competitiveness

JENNIFER BLANKE

World Economic Forum

Over the past several decades, Travel & Tourism (T&T) has taken its place as a key sector in the world economy. Today, it is widely recognized that the T&T industry has become a critical source of economic growth and development in many national economies, providing the potential to move up the value chain.

The year 2006 saw 842 million tourist arrivals around the world,[1] generating tourism receipts of US$ 682.7 billion.[2] The World Travel & Tourism Council (WTTC) estimates that, from direct and indirect activities combined, the T&T sector now accounts for 10.4% of global GDP, 12.2% of world exports, and 9.5% of world investment.[3]

The industry is one of the world's largest economic activities. In addition, it is the main industry in many countries, as well as the fastest-growing economic sector in terms of foreign exchange earnings and job creation according to the World Tourism Organization (UNWTO). Travel & Tourism is an important driver of growth and prosperity, as well as an important employment and foreign revenue generator.

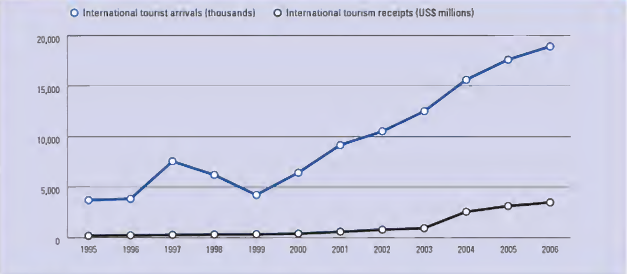
Ukraine's tourism industry has a long history, attracting numerous travelers since the 19th century, particularly to resorts in Crimea and Odessa. Today, the country continues to have much to offer, including the beauty of its landscape in areas such as the Carpathian Mountains, and the historic sites of cities such as Kyiv and Lviv.

Ukraine has seen a significant increase in the arrival of foreign tourists in recent years. Figure 6.1 shows the evolution of Ukraine's tourist arrivals and tourism receipts since the mid-1990s. The figure shows a more than five-fold increase in tourist arrivals, from approximately 3.7 million in 1995 to nearly 19 million foreign tourists in 2006. Tourism receipts from this activity have also surged from US$ 191 million to nearly US$ 3.5 billion over the period.

To place this evolution in context, Table 6.1 compares Ukraine's current performance on these indicators to a selection of comparator countries from the region. The first column of the table shows that Ukraine is attracting large numbers of tourists by regional standards, with one of the highest numbers of foreign travelers in 2006, comparable to those registered in Russia and Turkey, and well ahead of many other countries. However, the second column shows that the actual financial receipts from this activity lags behind most other countries, in most cases substantially so. The third column in the table effectively demonstrates this: the receipts earned per tourist in Ukraine lag well behind all other countries in the table, with the country earning only US$ 184 per tourist, compared with nearly twice that value in Russia and more than four times in Turkey, Croatia and Romania.

One explanation of this phenomenon is that approximately 60% of foreign visitors are from the CIS (mainly Russia, Belarus and Moldova) and the great majority of EU visitors to Ukraine come from neighboring Poland, Hungary and the Slovak Republic. Western European visitors remain limited.[4] These visitors are not making

Figure 6.1 Ukraine's international tourist arrivals and tourism receipts, 1995–2006



Source: World Tourism Organization

the types of larger expenditures that might be expected from the higher-income European countries traveling from farther away, and who constitute a larger proportion of tourists in many of the comparator countries shown in the table.[5]

More generally, tourism accounts for a relatively small proportion of the Ukrainian economy, both in terms of its contribution to overall gross domestic product (GDP) and employment. In 2007 the T&T industry directly contributed 1.9% of GDP, directly employing 313 thousand workers (accounting for just 1.5% of total employment). These figures are significantly lower than in many other countries in the region, as shown in Table 6.1. Although Ukraine attracts a similar number of foreign tourists as Russia and Turkey, the industry's contribution to GDP of US$ 2.2 billion is significantly lower than Russia's US$ 13.6 billion and Turkey's US$ 20.9 billion. At 1.9%, Ukraine's T&T industry contributes less than most countries shown in the table, with the exception of Lithuania and Russia, and far less than Croatia, Estonia and Hungary. The picture is similar with regard to employment by the sector, with all countries except for Lithuania and Russia employing a larger percentage of the workforce, in several cases by a significant margin.

Overall, the data show that Ukraine is not benefiting from the tourism industry to the extent that one might expect given its natural assets, historical tourism experience and favorable geographical location in the heart of Europe. Despite the important potential for cultural and environmental tourism development in Ukraine, a number of obstacles are hindering the sector's attractiveness as a location for developing the T&T sector. This chapter will provide an overview of the T&T competitiveness landscape in Ukraine, highlighting those areas requiring attention to improve the outlook for the sector going into the future.

6.1 The Travel & Tourism Competitiveness Index

Despite the critical importance of the T&T sector, a variety of national regulatory and other obstacles remain in many countries, hindering its development. The World Economic Forum (the Forum) together with leading organizations and companies from the T&T industry, have worked together to develop the first-ever Travel & Tourism Competitiveness Index (TTCI), which is at the heart of the Forum's annual *Travel & Tourism Competitiveness Report* series. The TTCI makes it possible to identify specific levers for improving T&T competitiveness in countries around the world. The analysis provides an opportunity for the T&T industry to highlight to national policymakers the obstacles to T&T competitiveness that require policy attention, and to enable dialogue between the private and public sectors for improving the environment for developing the T&T industry at the national level.

The TTCI aims to measure the factors and policies that make it attractive to develop the T&T sector in different countries based on three broad categories of variables that facilitate or drive T&T competitiveness. These categories are summarized into three subindexes: (1) the T&T regulatory framework, (2) the T&T business environment and infrastructure, and (3) the T&T human, cultural and natural resources. The first subindex captures those elements that are policy-related and generally under the purview of the government; the second subindex captures elements of the business environment and the "hard" infrastructure of each economy; the third subindex captures the human, cultural and natural elements of each country's resource endowments.

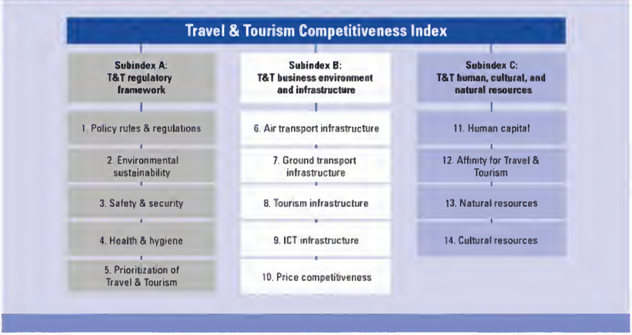
Each of these three subindexes is composed of a number of pillars of T&T competitiveness, of which there are 14:

Table 6.1 International tourism data for Ukraine and comparator countries, 2006

Country	International tourist arrivals (thousands)	International tourism receipts (US$ millions)	Tourism receipts per tourist (US$)	Tourism industry GDP		Tourism industry employment	
				US$ millions	% of total	Jobs (thousands)	% of total
Croatia	8,659	7,902	913	4,029	8.5	112	9.7
Estonia	1,940	1,029	531	573	3.0	17	2.7
Hungary	9,259	4,519	488	4,410	3.3	199	5.0
Lithuania	2,180	1,038	476	462	1.3	18	1.1
Poland	15,670	7,239	462	7,236	1.9	277	1.9
Romania	1,380	1,298	941	3,100	2.1	295	3.4
Russian Fed	20,199	7,025	348	13,613	1.1	684	1.0
Turkey	18,916	16,853	891	20,950	4.9	644	2.8
Ukraine	18,936	3,485	184	2,198	1.9	313	1.5

Sources: United Nations World Tourism Organization; World Travel & Tourism Council, *TSA Research 2007*

Figure 6.2 Composition of the three subindexes of the TTCI


Travel & Tourism Competitiveness Index
Subindex A: T&T regulatory framework
Subindex B: T&T business environment and infrastructure
Subindex C: T&T human, cultural, and natural resources
1. Policy rules & regulations
2. Environmental sustainability
3. Safety & security
4. Health & hygiene
5. Prioritization of Travel & Tourism
6. Air transport infrastructure
7. Ground transport infrastructure
8. Tourism infrastructure
9. ICT infrastructure
10. Price competitiveness
11. Human capital
12. Affinity for Travel & Tourism
13. Natural resources
14. Cultural resources

1. Policy rules and regulations
2. Environmental sustainability
3. Safety and security
4. Health and hygiene
5. Prioritization of Travel & Tourism
6. Air transport infrastructure
7. Ground transport infrastructure
8. Tourism infrastructure
9. ICT infrastructure
10. Price competitiveness in the Travel & Tourism industry
11. Human resources
12. Affinity for Travel & Tourism
13. Natural resources
14. Cultural resources

Figure 6.2 summarizes the structure of the overall Index, showing how the 14 pillars are allocated within the three subindexes. Each of the pillars is made up of a number of individual variables, of which there are more than 70. The dataset includes both hard data and survey data from the World Economic Forum's annual Executive Opinion Survey.[6]

6.2 Ukraine in the Travel & Tourism Competitiveness Index rankings 2008

Tables 6.2 through 6.5 show the performance of Ukraine and selected comparator countries. Also reported are the regional averages for the 15 European Union members prior to 2004 (EU 15),[7] for the 12 countries that have joined the EU since 2004 (EU Accession 12),[8] and for the CIS countries.[9]

Table 6.2 shows the Travel & Tourism Competitiveness Index results for Ukraine and selected comparators.

The countries are arranged by performance, showing that Ukraine receives a better assessment than the average performance of the CIS countries, as well as that of Azerbaijan and Kazakhstan shown in the table. However,

Table 6.2 The Travel & Tourism Competitiveness Index results for Ukraine and selected comparators

	TTCI 2008		T&T regulatory framework		T&T business environment and infrastructure		T&T human, cultural, and natural resources	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
United States	7	5.28	49	4.75	1	5.58	2	5.52
EU 15		*5.11*		*5.47*		*5.04*		*4.82*
Estonia	26	4.85	18	5.41	18	4.91	49	4.22
Malaysia	32	4.63	37	5.04	39	4.31	23	4.55
Hungary	33	4.60	19	5.40	41	4.18	50	4.21
Croatia	34	4.59	39	5.02	38	4.32	32	4.43
EU Accession 12		*4.49*		*5.08*		*4.24*		*4.16*
Lithuania	47	4.33	31	5.21	45	4.00	74	3.79
Brazil	49	4.29	84	4.11	67	3.55	6	5.21
Chile	51	4.27	45	4.86	54	3.82	54	4.14
Turkey	54	4.19	56	4.57	57	3.73	44	4.28
Mexico	55	4.18	71	4.30	61	3.62	19	4.62
Poland	56	4.18	60	4.51	62	3.62	34	4.42
Argentina	58	4.17	65	4.44	64	3.57	27	4.50
China	62	4.06	103	3.91	70	3.45	13	4.81
Russian Federation	64	4.04	80	4.21	65	3.56	39	4.35
India	65	3.99	107	3.78	59	3.70	26	4.50
Romania	69	3.88	72	4.29	66	3.55	73	3.79
Ukraine	**77**	**3.76**	**59**	**4.53**	**78**	**3.24**	**100**	**3.51**
Azerbaijan	79	3.72	62	4.49	79	3.24	105	3.44
CIS		*3.63*		*4.40*		*2.92*		*3.57*
Kazakhstan	91	3.61	61	4.50	96	2.94	112	3.39

it trails all other comparator countries, in many cases by a wide margin. This is particularly true compared with the best performing transition economies shown, Estonia and Croatia, ranked 26th and 34th respectively, and also compared with the average performance of the EU Accession 12 countries. Ukraine also lags behind the four large emerging economies of Brazil, Russia, India and China (the so-called BRICs), and quite substantially behind its immediate neighbors shown, with an eight-rank gap compared with the nearest-ranked Romania.

To understand why Ukraine's performance trails behind most comparators, the next sections present an analysis of the country's comparative performance in each of the 14 pillars of the index. Comparisons are primarily drawn with the countries shown in the tables in this chapter, and additional country comparisons of the full 130-country sample are also made when relevant.

Policy rules and regulations

This pillar captures the extent to which the policy environment is conducive to developing the T&T sector in each country. Governments can have an important impact on the attractiveness of developing this sector, depending on whether the policies they create and perpetuate support or hinder the sector's development. Sometimes well-intentioned policies can end up creating red tape or obstacles that have the opposite effect than that which was intended.

In this pillar, Ukraine is ranked 100th, or third-to-last out of all countries shown in Table 6.3, followed only by India and Russia. This stands in strong contrast to the countries with the most T&T-friendly regulatory environments such as Malaysia (12th), Chile (18th) and the United States (19th), as well as most transition economies shown in the table.

Although Ukraine does moderately well in the top half of the rankings with regard to the business start-up environment, ranked 62nd and 44th in the time and cost required to start a business respectively, most other aspects of the policy environment are hindering the development of the T&T sector. In particular, foreign ownership and foreign direct investment are not encouraged (ranked 123rd). Foreign ownership of land is prohibited and property rights are not sufficiently protected (118th). With regard to tourism-specific policies, the bilateral Air Service Agreements into which the country has entered are not deemed to be open, limiting competition in the air transport sector. In addition, the visa regime is somewhat restrictive, requiring visas from 80% of UN countries, although less so than in several other countries, such as Russia and India. The abolition of visa requirements for most Western visitors as of 2005 has been an important step in the right direction of facilitating entry of tourists into the country.

Improvements are expected in the policy arena in the years to come, given the required structural reforms, deregulation and liberalization that must be carried out in the course of accession to the World Trade Organization, and as it strengthens its relationship with the European Union. If implemented, such reforms should have positive

Table 6.3 Ukraine in the Travel & Tourism Competitiveness Index 2008: Regulatory framework

	T&T regulatory framework		1. Policy rules and regulations		2. Environmental sustainability		3. Safety and security		4. Health and hygiene		5. Prioritization of Travel & Tourism	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Ukraine	**59**	**4.53**	**100**	**3.72**	**83**	**4.23**	**93**	**4.53**	**17**	**6.40**	**96**	**3.76**
Argentina	65	4.44	91	3.95	107	3.94	98	4.45	40	5.62	70	4.23
Azerbaijan	62	4.49	72	4.14	101	4.01	43	5.46	49	5.22	101	3.63
Brazil	84	4.11	95	3.81	37	4.90	128	3.15	69	4.46	68	4.24
Chile	45	4.86	18	5.25	62	4.53	36	5.60	63	4.53	58	4.39
China	103	3.91	89	3.96	110	3.92	121	3.60	99	3.21	36	4.86
Croatia	39	5.02	66	4.26	41	4.84	41	5.52	28	5.99	51	4.48
Estonia	18	5.41	26	5.06	43	4.82	26	5.75	20	6.27	23	5.14
Hungary	19	5.40	35	4.82	25	5.05	28	5.73	11	6.57	37	4.80
India	107	3.78	102	3.71	71	4.39	117	3.86	110	2.58	59	4.38
Kazakhstan	61	4.50	77	4.12	120	3.73	73	4.90	33	5.85	83	3.90
Lithuania	31	5.21	50	4.55	18	5.32	46	5.43	2	6.98	94	3.80
Malaysia	37	5.04	12	5.34	44	4.79	42	5.51	70	4.43	24	5.12
Mexico	71	4.30	49	4.56	85	4.20	122	3.59	79	4.21	31	4.94
Poland	60	4.51	65	4.28	58	4.58	88	4.58	54	4.96	73	4.18
Romania	72	4.29	48	4.57	51	4.69	75	4.87	89	3.75	102	3.58
Russian Federation	80	4.21	110	3.46	117	3.79	127	3.16	9	6.65	80	3.98
Turkey	56	4.57	43	4.87	90	4.11	79	4.85	62	4.61	45	4.60
United States	49	4.75	19	5.22	100	4.02	119	3.75	44	5.50	21	5.26
EU 15		5.47		5.19		5.47		5.78		6.27		4.67
EU Accession 12		5.08		4.53		4.93		5.45		6.04		4.43
CIS		4.40		3.92		4.07		4.84		5.38		3.77

effects for the T&T industry as well as many other sectors of the economy. The question remains as to how quickly the policy reforms will be implemented.

Environmental sustainability

The importance of the natural environment for providing an attractive location for tourism cannot be overstated. It is clear that policies and factors enhancing environmental sustainability are crucial for ensuring that a country will continue to be an attractive destination going into the future.

Ukraine is ranked 83rd out of 130 countries in this pillar. This is well behind the best performers shown in the table, most notably Lithuania (18th), Hungary (25th) and Brazil (37th), although it is better assessed than some countries including Mexico (85th), Turkey (90th), the United States (100th), and China (110th).

In general, Ukraine's environmental regulation is not seen to be sufficiently stringent (114th), nor enforced (110th), and the government is not perceived to be prioritizing the development of the sector in a sustainable way (120th). However, on a more positive note the government is making some efforts with regard to international environmental treaty ratification, having entered into many of the key agreements, thus signaling its intent to focus on environmental concerns.

With regard to environmental "outputs" related to environmental regulation, Ukraine suffers from a high level of carbon dioxide emissions (ranked 87th), and a high percentage of the country's known fauna is threatened with extinction. A focus on developing the sector in a more environmentally sustainable way should be prioritized given the importance of the quality of the environment for Ukraine's potential resort and mountain tourism.

Safety and security

The physical safety environment within a country is a critical factor determining the competitiveness of a country's T&T industry. Tourists are likely to be deterred from traveling to dangerous countries or regions, making the T&T sector less attractive to develop in those places. This is another area requiring attention in Ukraine, ranked 93rd overall on this pillar.

Ukraine ranks well ahead of the large BRIC economies in this area, most particularly Russia and Brazil, both ranked near the bottom of all countries for their security environments. However, Ukraine receives a worse assessment than all other European countries from the region shown in the table, most notably Estonia and Hungary, ranked 26th and 28th, respectively, and behind the average of all CIS countries.

Crime and violence is of some concern in Ukraine (ranked 72nd), although less so than in countries such as Brazil, China, Poland and Russia. Somewhat more worrisome is the perception that the police cannot be relied upon to provide protection from crime (104th), ranked just behind Honduras and South Africa out of the full 130-country sample. In addition, similar to several countries in the region, Ukraine's roads are dangerous: the number of accident-related deaths is so high as to place Ukraine 98th on this indicator, undoubtedly related to the poor quality of the road infrastructure, as discussed below.

Health and hygiene

As well as safety from violence, safety from illness and the availability of healthcare services is also an important factor driving T&T competitiveness. This is an area of competitive strength for Ukraine, which is ranked a high 17th in this pillar, just ahead of Finland and Italy, as well as most other countries shown in the table, and significantly ahead of the CIS average.

Most Ukrainians have access to improved drinking water and sanitation, similar to the situation in countries such as Estonia and Hungary. In addition, Ukraine boasts so many hospital beds per capita as to place the country 3rd worldwide, behind only Japan and Russia on this indicator. The physician density in the country places it 30th, just ahead of Denmark and Ireland.

Prioritization of the T&T sector

The extent to which the government prioritizes the T&T sector also has an important impact on T&T competitiveness. By making it clear that T&T is a priority sector, and by reflecting this in its budget priorities, the government can channel needed funds to essential development projects. It also sends a signal of its intentions, which can have positive spillover effects, such as attracting further private investment into the sector.

Ukraine's ranking of 96 on this pillar places it third to last out of all countries shown in Table 6.3, followed only by Azerbaijan and Romania, and with a median score of 3.76 just below the CIS average. The details present a mixed picture, with both weaknesses and strengths.

Most problematic is the business community's perception that the government is not prioritizing the sector, with Ukraine ranked 120th on this indicator near the bottom of all 130 countries covered. In addition, Ukraine's marketing and branding to attract tourists gets very poor marks (112th), similar to a number of other countries in the region.

However, there are positive aspects as well. The country is represented at several international tourism fairs, where Ukraine directly markets itself as a tourism destination. Further, despite perceptions about a lack of government prioritization, tourism is reflected in an important way in the government budget, accounting for 5% of government spending, placing Ukraine 34th overall on this indicator, and ahead of most other comparator countries. This is also reflected by the creation in 2001 of a state body to promote tourism, the State Tourism Administration of Ukraine (STAU), which aims to develop the sector and overcome obstacles to its development.

It appears that the government understands the importance of developing the sector and of tackling policy issues. Going forward, it will be important to articulate more clearly to the public and the business community the importance of the T&T industry for the development of the Ukrainian economy.

Air transport infrastructure

High quality and readily available air transport infrastructure provides ease of access to and from countries, as well as access to destinations within countries.

In this pillar Ukraine ranks 98th, below all other comparator countries shown in Table 6.4, and with a score of 2.44, receives a worse assessment than that of the CIS country average of 2.56. The data show that Ukraine's air transport infrastructure lags well behind the large four BRIC economies, all of which are in the top half or even the top third of the rankings, such as Russia, ranked significantly higher at 33rd. Romania, the second lowest ranked country in the table, is ranked a full ten places higher than Ukraine at 88th.

Several aspects related to the quantity of available air transport in Ukraine are relatively well assessed. The country benefits from the existence of 48 operating airlines, placing the country a high 29th on this indicator, similar to countries such as Mexico, Korea and Brazil. Ukraine ranks among the top half of all 130 countries covered for the scheduled available seat kilometers originating in the country (60th), higher than several other European countries.

However, quality assessments indicate the importance of investing to improve its overall functioning. The quality of the overall air transport infrastructure gets abysmal marks on this indicator, ranked 116th, just behind Zimbabwe and Guyana in the full country sample. In addition, from a business travel perspective, the perception exists that the air transport network does not offer good connections to the overseas markets that offer Ukrainian businesses the greatest potential (ranked 120th), and is well behind all other comparator countries shown in Table 6.4.

Clearly, upgrading the quality of the air transport network and improving the connectivity to key overseas markets should be a priority in developing the T&T sector in Ukraine. For this to take place, it would be helpful to provide more clarity in the policy environment. Currently, the government's plans for developing the sector remain somewhat ambiguous, with no clear policy agenda regarding the way forward, which makes it difficult to attract further investment into the sector.[10]

Ground transport infrastructure

Particularly vital for ease of movement within the country, as well as regional tourism, is the extensiveness and quality of the country's ground transport infrastructure.

At 84th, Ukraine ranks somewhat better in this area than for its air transport infrastructure, just behind Russia and Mexico, and ahead of Argentina, Brazil and Kazakhstan, as well as the CIS average of 3.13. On the other hand, as Table 6.4 shows, the average score of 3.24 places Ukraine well behind many of the other comparator countries, and notably lower than the EU 15 and the EU Accession 12 averages.

Table 6.4 Ukraine in the Travel & Tourism Competitiveness Index 2008: Business environment and infrastructure

	T&T business environment and infrastructure		6. Air transport infrastructure		7. Ground transport infrastructure		8. Tourism infrastructure		9. ICT infrastructure		10. Price competitiveness in the T&T industry	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Ukraine	**78**	**3.24**	**88**	**2.44**	**84**	**3.24**	**62**	**3.54**	**52**	**3.06**	**115**	**3.94**
Argentina	64	3.57	67	2.94	90	3.05	53	3.91	54	3.03	41	4.94
Azerbaijan	79	3.24	79	2.69	52	4.15	92	2.37	84	2.27	62	4.72
Brazil	67	3.55	45	3.59	95	2.89	47	4.17	58	2.82	92	4.31
Chile	54	3.82	50	3.44	53	4.13	64	3.37	47	3.28	45	4.87
China	70	3.45	36	3.98	81	3.80	119	1.53	66	2.62	17	5.30
Croatia	38	4.32	66	2.96	54	4.05	10	6.63	37	3.72	98	4.26
Estonia	18	4.91	55	3.26	25	5.01	11	6.36	17	5.14	60	4.75
Hungary	41	4.18	65	2.98	32	4.81	27	4.89	35	3.82	79	4.43
India	59	3.70	35	4.00	39	4.51	80	2.78	97	1.98	20	5.23
Kazakhstan	96	2.94	85	2.63	91	3.04	100	2.19	77	2.40	80	4.42
Lithuania	45	4.00	82	2.66	27	4.97	58	3.72	33	4.06	73	4.58
Malaysia	39	4.31	32	4.18	28	4.95	71	3.19	46	3.37	3	5.89
Mexico	61	3.62	42	3.78	82	3.28	49	4.00	64	2.67	83	4.39
Poland	62	3.62	87	2.57	57	3.95	60	3.60	41	3.59	87	4.36
Romania	66	3.55	88	2.57	74	3.44	38	4.42	48	3.24	109	4.10
Russian Federation	65	3.56	33	4.14	83	3.25	66	3.33	51	3.08	112	3.98
Turkey	57	3.73	44	3.71	63	3.79	50	4.00	55	2.97	103	4.19
United States	1	5.58	2	6.34	19	5.45	6	6.74	13	5.23	105	4.16
EU 15		5.04		4.77		5.65		5.95		4.97		3.87
EU Accession 12		4.24		3.11		4.59		5.16		3.94		4.39
CIS		2.92		2.56		3.13		2.10		2.23		4.60

The worst assessment in this pillar is for the quality of the country's roads, for which Ukraine is ranked a low 116th, just behind Albania and Nigeria. Similarly, the overall domestic transport network is not seen to offer efficient, accessible transportation to a wide range of travelers to key business centers and tourist attractions within Ukraine (ranked 103rd). The general picture is that the roads were for the most part built during the Soviet period and have not been sufficiently maintained, with few large highways. For example, the Kyiv-Odessa highway is still under construction. This is clearly an area requiring investment to upgrade the transport infrastructure and improve the travel experience for travelers.

A positive aspect of Ukraine's transport infrastructure is to be noted, which is the quality of the country's railroad infrastructure, ranked higher at 31st, just behind Russia and Lithuania. The railways currently provide an important means of transport in the country, given the shortcomings related to the road and air transport networks, although investment in this area would be useful to ensure sufficient maintenance.

Tourism infrastructure

As well as the transport infrastructure, the quality and availability of the tourism specific infrastructure is an important element of T&T competitiveness.

Ukraine is relatively well assessed on this pillar, placing in the top half of the rankings at 62nd, and ahead of a number of other countries shown in Table 6.4 including Azerbaijan, Chile, China, Kazakhstan, India, Malaysia and Russia. Ukraine's average score of 3.54 is also well ahead of the CIS average of 2.10.

With regard to car rental facilities, Ukraine benefits from the presence of five international car rental companies, placing it in the top half of the rankings on this indicator at 56th, together with countries such as Chile, Lithuania and Russia. The financial infrastructure for tourists is also quite developed, with many ATMs available for cash withdrawal, placing Ukraine in the top third of the rankings at 33rd, ranked just behind Hungary and the Slovak Republic.

However, hotel rooms remain scarce by international comparison, ranked 104th on this indicator, just behind Benin and Nepal, and followed directly by Moldova. Quality is a problem as well as quantity: in the main tourist areas most of the hotels were built several decades ago and in substantial need of upgrading. This provides ample investment opportunities in the area of hotel infrastructure in Ukraine. Several international hotel firms also have plans to enter Ukraine. Some improvements have already been seen, with investors taking interest in particular in Crimea and the Carpathians. Further, since 2007, travelers to Kyiv have benefited from the existence of three five-star hotels.[11] A construction of particular note is taking place in Bukovel in the Carpathian Mountains, where there are plans to spend US$ 1 billion by 2010 to build a Western-style ski resort.[12]

ICT infrastructure

Given the increasing importance of the online environment for the modern T&T industry for planning itineraries and purchasing travel and accommodations, the quality of the ICT infrastructure in each economy plays an important role.

ICT adoption has become an increasing strength in Ukraine in recent years. Ukraine places in the top half of the rankings on this pillar, at 52nd, and ahead of all of the large emerging BRIC economies, except Russia, which is one rank higher at 51st place. Ukraine's average score of 3.06 is also significantly ahead of the CIS average of 2.23, although it continues to lag somewhat behind the EU Accession 12 average of 3.94.

With regard to telephony, Ukraine's coverage of fixed telephone lines places the country 48th on this indicator. Even more impressive has been the uptake of mobile phones, which are now so prevalent as to place Ukraine 22nd on this indicator, in the company of such well-networked countries as Denmark, Spain and Sweden.

Internet uptake has been a bit less rapid in Ukraine, with Internet users ranked 78th, and businesses not yet seen to be using the Internet extensively for carrying out business transactions (ranked 77th, just behind Colombia and Kenya on this indicator). Broadband penetration has been somewhat more successful, with Ukraine ranked 63rd for broadband Internet subscribers.

Given the importance of the Internet for developing a modern T&T industry, it is encouraging to see the progress being made in areas such as telephony. However, efforts should be made to make the society more networked ready, something that would benefit the development of the T&T industry as well as most other industries and Ukraine's economy as a whole. For more details on Ukraine's networked readiness, see Chapter 5.

Price competitiveness in the T&T industry

Comparative prices are another key element of T&T competitiveness, with lower costs increasing the attractiveness of some countries for many travelers.

This is a clear competitive disadvantage for Ukraine. As shown by Table 6.4, ranked 115th, Ukraine receives the worst assessment out of all comparators shown in the table. Its score of 3.94 is well below that of the CIS average of 4.6, and just slightly ahead of the average of the EU 15 group of expensive rich countries.

Ukraine's poor rating for price competitiveness comes despite the country's very low comparative price level, also taken into account, and which places Ukraine 22nd out of all countries and ahead of all comparators shown in Table 6.4 except for China and India. The overall low ranking is driven by a number of other factors.

An important factor in the tourism transportation sector is fuel prices, which are relatively high in Ukraine, ranked 68th overall. More strikingly, ticket taxes and airport charges, which increase the cost of airline tickets, are high enough to rank Ukraine 87th out of all countries. More generally, the level of taxes in the country are seen to be quite distortive in making business and purchasing decisions, placing the country near the bottom of the overall rankings at 122nd. Finally, hotel prices in Ukraine are very high by international standards, with the country ranked 112th, ranked just behind France and Qatar. This is likely related to the shortage of hotel rooms.

To summarize, despite a low overall price level in the country, Ukraine proves an expensive tourist destination. This is attributable in part to a number of taxation and policy-related issues, which if addressed could improve Ukraine's price competitiveness. Given the low spend per tourist, lowering prices would not likely lead to a reduction in overall tourism receipts and would improve the overall outlook for the industry.

Human resources

It is also very important to have well qualified and healthy workers in the economy, ensuring that the T&T industry has access to the human resources it needs to develop and grow.

This is an area where Ukraine, ranked 80th, lags behind all other comparator countries shown in Table 6.5 with the exception of India. The margin with most other countries is rather wide, with Turkey, the next-lowest ranked country placed seven ranks higher at 73rd, and most other countries well in the top half of the rankings. Ukraine's score of 4.87 in this pillar is also lower than that of the average of 4.92 for CIS countries.

The human resources pillar comprises two components: education and training, and the availability of qualified labor.

Ukraine is ranked 77th for education and training. While the quality of the educational system gets reasonable marks, placing Ukraine 47th, ranked just behind Russia and ahead of Poland and several other European countries, educational attainment lags by international standards. The gross secondary school enrolment rate places Ukraine 54th out of all countries, which is somewhat low compared to other transition economies. Of greater concern is the low net primary education enrolment rate of just over 83%, which places Ukraine 105th out of 130 countries.

Also of concern is the lack of staff training provided to ensure the continuous learning on-the-job tasks for workers. Ukraine is ranked 98th for the extent of staff training provided by companies, and 85th for the availability of specialized research and training services. Clearly, efforts should be made both to increase enrolment rates in the formal educational system as well as improve on-the-job training to better prepare the Ukrainian labor force to work in the T&T sector.

Ukraine is placed in the middle of the overall rankings on the "availability of qualified labor" component, at 68th, and ahead of several of the comparator countries, including Russia (ranked 91st) and Turkey (ranked 85th). The main strength in this area for Ukraine is the high

Table 6.5 Ukraine in the Travel & Tourism Competitiveness Index 2008: Human, cultural, and natural resources

	T&T human, cultural and natural resources		11. Human resources		12. Affinity for Travel & Tourism		13. Natural resources		14. Cultural resources	
Country/Economy	**Rank**	**Score**	**Rank**	**Score**	**Rank**	**Score**	**Rank**	**Score**	**Rank**	**Score**
Ukraine	**100**	**3.51**	**80**	**4.87**	**62**	**4.83**	**104**	**2.39**	**84**	**1.95**
Argentina	27	4.50	60	5.01	74	4.69	12	5.01	41	3.29
Azerbaijan	105	3.44	54	5.04	69	4.75	110	2.31	99	1.66
Brazil	6	5.21	66	4.98	94	4.48	3	5.81	12	5.58
Chile	54	4.14	36	5.29	96	4.46	52	3.49	39	3.30
China	13	4.81	48	5.07	126	3.92	8	5.25	19	5.01
Croatia	32	4.43	50	5.05	7	6.25	68	3.08	37	3.35
Estonia	49	4.22	33	5.33	18	5.59	43	3.79	74	2.18
Hungary	50	4.21	57	5.03	108	4.33	90	2.74	23	4.75
India	26	4.50	93	4.75	88	4.57	13	4.94	31	3.73
Kazakhstan	112	3.39	55	5.03	79	4.65	115	2.23	101	1.63
Lithuania	74	3.79	53	5.04	52	4.94	92	2.71	63	2.44
Malaysia	23	4.55	22	5.53	22	5.47	18	4.70	59	2.50
Mexico	19	4.62	52	5.05	86	4.59	25	4.44	25	4.43
Poland	34	4.42	41	5.18	120	4.06	46	3.72	24	4.72
Romania	73	3.79	68	4.96	101	4.42	96	2.67	44	3.12
Russian Federation	39	4.35	72	4.93	111	4.32	22	4.58	34	3.57
Turkey	44	4.28	73	4.92	38	5.14	79	2.97	28	4.08
United States	2	5.52	5	5.91	114	4.29	2	6.04	7	5.83
EU 15		4.82		5.58		4.89		3.34		5.49
EU Accession 12		4.16		5.15		5.07		3.00		3.44
CIS		3.57		4.92		4.86		2.63		1.88

flexibility in the economy for hiring and firing workers (ranked 16th), which makes it easier for companies to ensure that they have the right employees in the necessary positions. However, hiring of foreign labor, particularly important in the T&T industry given its seasonality characteristics, is highly restricted in Ukraine, placing the country 107th on this indicator. This is particularly problematic given the decline in the population since independence and the continuing flows of emigration.

There are also concerns related to the health of the workforce in Ukraine, as indicated by the low life expectancy of 68 years, which places the country 91st on this indicator, well behind most European countries. Poor health clearly limits the availability of qualified workers in the country, something particularly important to address given the difficulty of hiring workers from abroad.

Affinity for Travel & Tourism

This pillar measures the extent to which the country and society are open to tourism and foreign visitors. It is clear that the general attitude of the population to travel and to foreign visitors has an important impact on T&T competitiveness.

Ukraine is placed within the top half of the overall ranking in this pillar, at 62nd place. Table 6.5 shows that it receives a better assessment than most comparators, and is well ahead of countries such as China, Hungary, Poland, Russia and the United States. Ukraine's score of 4.83 is just barely behind the EU 15 score of 4.89, demonstrating that regionally, this should be seen as a comparative advantage.

The attitude of the population towards tourists, while ranked 117th, receives a relatively high score of 5.88 out of 7, and better than a number of other comparator countries such as Russia (ranked 127th), and Poland (at 128th). In addition, when business leaders in Ukraine were asked whether they would recommend extending the business trip of an important business contact for leisure purposes, they responded quite positively, with a score of 5.62, and a rank of 58, similar to the responses in the Czech Republic and India. And as indicated by data on the overall openness of the economy to tourism, Ukraine is ranked a relatively high 45th, higher than most comparator countries. Overall, Ukraine's affinity for Travel & Tourism is a relative strength to build upon in boosting the sector's prospects.

Natural resources

Countries able to offer travelers access to natural assets clearly have a competitive advantage with regard to developing their T&T industries.

Ukraine is ranked 104th on this pillar, not far behind Hungary, Lithuania and Romania and ahead of Azerbaijan (110th) and Kazakhstan (115th) among countries shown in Table 6.5. Ukraine is endowed with one World Heritage natural site (the Primeval Beech Forests of the Carpathians), placing the country 39th on this indicator, along with Croatia, Hungary, Poland, Romania, Slovenia, and ahead of several of the countries shown in Table 6.5. In addition, there are a number of other natural sites on the tentative list being evaluated by UNESCO. Ukraine has relatively rich fauna by regional standards, ranking the country 77th, similar to countries such as Germany and Portugal. Clearly, there are a number of natural endowments that lend strength to Ukraine's natural resource offering for tourists.

However, related to the discussion about environmental sustainability, the main weaknesses in this area are related to the protection of the natural environment. Ukraine protects only 3.4% of its national land area, placing the country 100th on this indicator. By comparison, Estonia ensures 31% of protected areas (ranked 8th), Poland 27.1% (ranked 14th), the United States 23.2% (ranked 19th), and Brazil 18.7% (ranked 28th). In all of Europe, just eight countries have less protected land area than Ukraine, including countries such as Albania, Moldova, and Bosnia and Herzegovina. Perhaps related to this point, the quality of the natural environment does not receive a very positive assessment, ranked near the bottom of all countries, at 121st. Only two countries shown in Table 6.5 receive a lower rank: Mexico and China.

Overall, this reinforces the importance of placing a stronger emphasis on the protection of the natural environment in Ukraine to protect its natural resources going into the future.

Cultural resources

The cultural resources at each country's disposal are also a critical driver of T&T competitiveness around the world. Ukraine ranks 84th on this pillar, behind most countries shown in table 6.5, but ahead of Azerbaijan and Kazakhstan; with a score of 1.95, it receives a better assessment than the CIS country average of 1.88.

Ukraine receives a relatively good assessment for its cultural endowments, ranked among the top half of all countries at 54th for its three World Heritage Cultural Sites (Saint-Sophia Cathedral in Kyiv, the Historic Centre of Lviv and the Struve Geotetic Arc). With regard to business travelers, it has been able to attract a number of international fairs and exhibitions to the country, ranked 70th on this indicator, ahead of several other transition economies.

In terms of other attributes, Ukraine does not have high sports stadium capacity (ranked 85th on this indicator), but more so than several of the comparator countries, such as Kazakhstan (ranked 92nd), Russia (ranked 106th), China (ranked 124th), and India (ranked 128th). In this context, the decision by UEFA to hold the Euro 2012 tournament in four cities in Ukraine[13] (and Poland), calling the country a "worthy winner", and citing the strong tradition of football in the country, sends an important signal about Ukraine's capacity for hosting such international sporting events.[14] The consequent investment in upgrading stadium infrastructure, as well as transport and tourism infrastructure to prepare the country for the tournament should have positive spillover effects for Ukraine's tourism sector as a whole once the tournament is over.

Overall, cultural resources can be seen as a relative strength to be built upon and reinforced going into the future, which is already taking place.

6.3 Conclusions

With its long history of attracting tourists and its many natural and cultural endowments, Ukraine has clear strengths to build upon in developing its travel and tourism industry. However, as we have seen in this chapter, a number of obstacles are hindering the country's travel and tourism competitiveness. These include creating a policy environment that is more conducive to the development of the T&T sector, including strengthened environmental legislation, as well as upgrading the country's transport and tourism infrastructure.

Removing the existing obstacles and creating a more conducive T&T industry environment will require efforts by both the public sector in areas such as improving regulation, as well as the private sector for channeling investment, for example. Should these areas be addressed there is every reason to expect Ukraine to see a rapid development of its tourism industry and the related economic benefits ushered in by such development.

Notes

1 UNWTO 2007a

2 UNWTO 2007a

3 WTTC 2007a.

4 EIU 2007a, p. 9-11.

5 As the income levels of these countries continue to rise, tourism receipts in Ukraine should be expected to grow

6 The hard data were obtained from publicly available sources, international T&T institutions, and T&T experts, for example, IATA, the International Civil Aviation Organization or ICAO, UNWTO, WTTC, and the United Nations Educational, Scientific and Cultural Organization or UNESCO The annual Executive Opinion Survey is carried out among CEOs and top business leaders in all economies covered by the Forum's research; these are the people making the investment decisions in their respective economies. The survey provides unique data on many qualitative institutional and business environment issues

7 The countries included in the EU 15 average are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom

8 The countries included in the EU Accession 12 average are: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic and Slovenia.

9 The countries included in the CIS average, based upon data availability, are: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia Tajikistan, Ukraine and Uzbekistan

10 Blinov et al. 2005, p. 2-3.

11 EIU 2007a, *Industry Forecast Travel & Tourism*, p 8-9.

12 New York Times 2006

13 Dnipropetrovsk, Donetsk, Kyiv and Lviv are the proposed host cities in Ukraine with Odessa a reserve city and the Olympic Stadium in Donetsk a reserve stadium.

14 UEFA 2007.

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Annex A: Composition of the Travel & Tourism Competitiveness Index

This appendix provides details about the construction of the Travel & Tourism Competitiveness Index (TTCI). The TTCI is composed of three subindexes: the T&T regulatory framework subindex; the T&T business environment and infrastructure subindex; and the T&T human, cultural, and natural resources subindex. These sub-indexes are, in turn, composed of the 14 pillars of T&T competitiveness shown below: policy rules and regulations, environmental sustainability, safety and security, health and hygiene, prioritization of Travel & Tourism, air transport infrastructure, ground transport infrastructure, tourism infrastructure, ICT infrastructure, price competitiveness in the T&T industry, human resources, affinity for Travel & Tourism, natural resources, and cultural resources. These pillars are calculated on the basis of both hard data and survey data.

The survey data comprise the responses to the World Economic Forum's Executive Opinion Survey and range from 1 to 7; the hard data were collected from various sources, which are described in the Technical Notes and Sources section at the end of *The Travel & Tourism Competitiveness Report 2008* (TTCR).

The hard data indicators used in the TTCI are normalized to a 1 to 7 scale to align them with the Executive Opinion Survey's results. The numbers preceding each variable refer to the individual data tables found in the Data Tables section of the TTCR.

Each of the pillars has been calculated as an unweighted average of the individual component variables. The subindexes are then calculated as unweighted averages of the included pillars. In the case of the human resources pillar, which is composed of two subpillars (education and training and availability of qualified labor), the overall pillar is the unweighted average of the two subpillars. The overall TTCI is then the un-weighted average of the three subindexes. The variables of each pillar and subpillar are described below. If a variable is one of hard data, this is indicated in parentheses after the description.

Subindex A: T&T Regulatory Framework

Pillar 1: Policy rules and regulations

1.01 Prevalence of foreign ownership
1.02 Property rights
1.03 Business impact of rules on FDI
1.04 Visa requirements (hard data)
1.05 Openness of bilateral Air Service Agreements (hard data)
1.06 Transparency of government policymaking
1.07 Time required to start a business (hard data)
1.08 Cost to start a business (hard data)

Pillar 2: Environmental sustainability

2.01 Stringency of environmental regulation
2.02 Enforcement of environmental regulation
2.03 Sustainability of T&T industry development
2.04 Carbon dioxide emissions (hard data)
2.05 Particulate matter concentration (hard data)
2.06 Threatened species (hard data)
2.07 Environmental treaty ratification (hard data)

Pillar 3: Safety and security

3.01 Business costs of terrorism
3.02 Reliability of police services
3.03 Business costs of crime and violence
3.04 Road traffic accidents (hard data)

Pillar 4: Health and hygiene

4.01 Physician density (hard data)
4.02 Access to improved sanitation (hard data)
4.03 Access to improved drinking water (hard data)
4.04 Hospital beds (hard data)

Pillar 5: Prioritization of Travel & Tourism

5.01 Government prioritization of the T&T industry
5.02 T&T government expenditure (hard data)
5.03 Effectiveness of marketing and branding to attract tourists
5.04 T&T fair attendance (hard data)

Subindex B: T&T Business environment and infrastructure

Pillar 6: Air transport infrastructure

6.01 Quality of air transport infrastructure
6.02 Available seat kilometers (hard data)
6.03 Departures per 1,000 population (hard data)
6.04 Airport density (hard data)
6.05 Number of operating airlines (hard data)
6.06 International air transport network (hard data)

Pillar 7: Ground transport infrastructure

7.01 Quality of roads
7.02 Quality of railroad infrastructure
7.03 Quality of port infrastructure
7.04 Quality of domestic transport network
7.05 Road density (hard data)

Pillar 8: Tourism infrastructure

8.01 Hotel rooms (hard data)
8.02 Presence of major car rental companies (hard data)
8.03 ATMs accepting Visa cards (hard data)

Pillar 9: ICT infrastructure

9.01 Extent of business Internet use
9.02 Internet users (hard data)
9.03 Telephone lines (hard data)
9.04 Broadband Internet subscribers (hard data)
9.05 Mobile telephone subscribers (hard data)

Pillar 10: Price competitiveness in the T&T industry

10.01 Ticket taxes and airport charges (hard data)
10.02 Purchasing power parity (hard data)
10.03 Extent and effect of taxation
10.04 Fuel price levels (hard data)
10.05 Hotel price index (hard data)

Subindex C: T&T Human, cultural, and natural resources

Pillar 11: Human resources

Education and training

11.01 Primary education enrolment (hard data)
11.02 Secondary education enrolment (hard date)
11.03 Quality of the educational system
11.04 Local availability of specialized research and training services
11.05 Extent of staff training

Availability of qualified labor

11.06 Hiring and firing practices
11.07 Ease of hiring foreign labor
11.08 HIV prevalence (hard data)
11.09 Business impact of HIV/AIDS
11.10 Life expectancy (hard data)

Pillar 12: Affinity for Travel & Tourism

12.01 Tourism openness (hard data)
12.02 Attitude of population towards foreign visitors
12.03 Extension of business trips recommended

Pillar 13: Natural resources

13.01 Number of World Heritage natural sites (hard data)
13.02 Protected areas (hard data)
13.03 Quality of the natural environment
13.04 Total known species (hard data)

Pillar 14: Cultural resources

14.01 Number of World Heritage cultural sites (hard data)
14.02 Sports stadiums (hard data)
14.03 Number of international fairs and exhibitions (hard data)

Note:

1 The standard formula for converting each hard data variable to the 1 to 7 scale is:

$$6 \times \frac{(\text{country score} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 1$$

The sample minimum and sample maximum are the lowest and highest scores of the overall sample, respectively. For those hard data variables for which a higher value indicates a worse outcome (e.g., road traffic accidents, fuel price levels), we rely on a normalization formula that, in addition to converting the series to a 1 to 7 scale, reverses it, so that 1 and 7 still correspond to the worst and best possible outcomes, respectively:

$$-6 \times \frac{(\text{country score} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 7$$

In some instances, adjustments were made to account for extreme outliers in the data.

Part II

Competitiveness Profiles

List of Competitiveness Profiles

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How to Read the Competitiveness Profiles

This part of the report presents detailed information in the form of competitiveness profiles for:
(i) Ukraine,
(ii) the 17 comparator countries, and
(iii) the 12 Ukrainian regions covered in Chapter 4.

The next few pages explain how to read each type of profile.

Ukraine

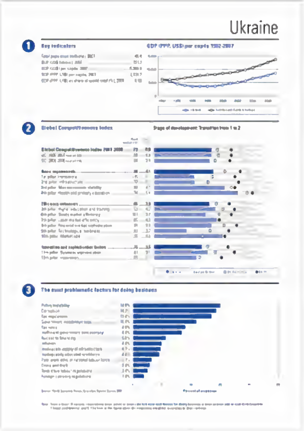
① Key indicators

The first section presents a selection of key production indicators for Ukraine. The chart on the upper right-hand side displays the evolution of Ukraine's gross domestic product (GDP) per capita adjusted for purchasing parity (PPP) from 1992 through 2007. The black line represents the aggregate performance of Europe and central Asia region as per the World Bank's country classification. The data for this section comes from the October 2007 edition of the International Monetary Fund (IMF) *World Economic Outlook* and the World Bank *World Development Indicators 2007*.

② Global Competitiveness Index

This section details Ukraine's performance on the various components of the Global Competitiveness Index (GCI). The first column contains Ukraine's ranking among the 131 countries covered by the GCI, while the second column reports the scores. The bar chart shows Ukraine's performance (blue bars) against that of the following comparators:

- EU Accession (white dots): this corresponds to the average score of the 12 new members of the European Union (EU), namely Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic and Slovenia.
- EU 15 (black dots): this corresponds to the average score of the first 15 members of the EU, namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.
- Best performer (black-outlined white bars): this corresponds to the score achieved by the best performing country among all the 131 countries included in the GCI 2007-2008. The country name is indicated next to the bar.



③ The most problematic factors for doing business

This chart summarizes those factors seen by business executives as the most problematic for doing business in their country. From a list of 14 factors, respondents were asked to select the five most problematic ones, and to rank those from 1 (most problematic) to 5. The blue bars represent the combined percentages of responses of the 2006 and 2007 editions of the World Economic Forum's Executive Opinion Survey (EOS), while the white dots shows the results of the 2004 edition of the EOS.

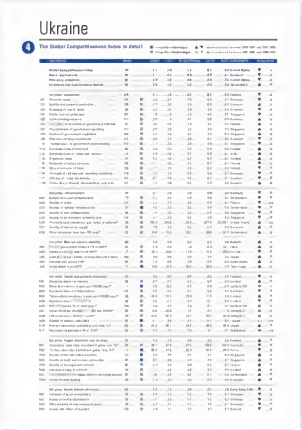
④ The Global Competitiveness Index in detail

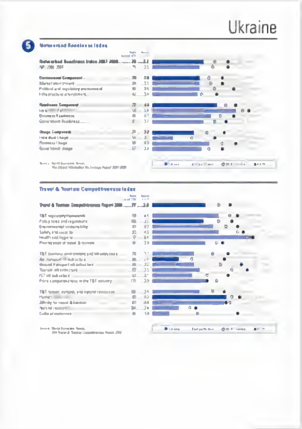
Pages 2 and 3 provide detailed information on each component and each indicator included in the GCI.

- **INDICATOR** This column contains the title of each component and each indicator. Hard data indicators are identified by an asterisk. For a full description of all the variables entering the GCI, please refer to the Appendix of Chapter 1.
- **RANK** This column reports Ukraine's position among the 131 economies covered by the GCI 2007–2008. Next to the rank, a colored square indicates whether an indicator constitutes an advantage (■) or a disadvantage (■) for the country. For Ukraine, like for all economies ranked lower than 50 in the overall GCI, any individual variables ranked higher than 51 are considered as advantages. Any variables ranked lower than 50 are considered as disadvantages.
- **SCORE** This column reports Ukraine's score. For survey data, scores range from 1 (lowest) to 7 (highest).
- **CIS EU ACCESSION EU 15** For the sake of comparison, we report the average scores of the Commonwealth of Independent States' member countries (CIS), of the 12 new EU members (EU Accession), and of the EU's first 15 members (EU 15). For more information, please refer to the Country Classifications page at the beginning of this report.
- **BEST PERFORMER** The two columns under this heading report the score and the name of the best performing country. When several countries share the first rank, the number of countries is reported in the second column.
- **EVOLUTION** This column shows Ukraine's evolution in the score of each component and indicator. The first arrow indicates whether Ukraine's score in the GCI 2007–2008 has improved (▲), worsened (▼), or remained unchanged (=) compared to the 2006–2007 edition. The second arrow indicates whether Ukraine's score in 2006–2007 has improved (▲), worsened (▼) or remained unchanged (=) compared to the 2005–2006 edition.

⑤ The Networked Readiness Index and the Travel & Tourism Competitiveness Index

Page 4 shows the performance of Ukraine in the latest editions of two indexes developed by the World Economic Forum and discussed in this report: the Networked Readiness Index 2007–2008 presented in Chapter 5 and the Travel & Tourism Competitiveness Index 2008 presented in Chapter 6. For both indexes, the same presentation as for the GCI is adopted. (See ② above for details.)





Comparator Countries

① Key indicators

The first section presents a selection of key gross domestic product (GDP) figures. The chart on the upper right-hand side displays the evolution of GDP per capita adjusted for purchasing parity (PPP) from 1992 through 2007 for the country under review (blue line). The black line represents Ukraine's performance. The data for this section comes from the October 2007 edition of the International Monetary Fund (IMF) *World Economic Outlook*.

② Global Competitiveness Index

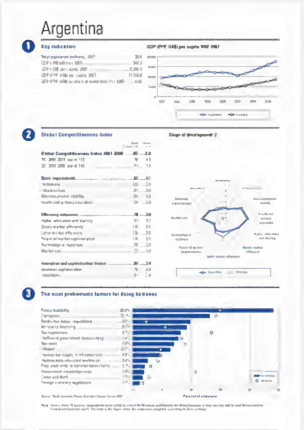
This section details the country's performance in the various components of the Global Competitiveness Index (GCI). The first column shows the country's ranks among the 131 countries covered by the GCI 2007–2008, while the second column presents the scores. The country's stage of development is indicated in the upper right-hand side. On the right-hand side, the chart shows the country's performance in the 12 pillars of the GCI (blue line) measured up against Ukraine's performance (gray line).

③ The most problematic factors for doing business

This chart summarizes those factors seen by business executives as the most problematic for doing business in their country. From a list of 14 factors, respondents were asked to select the five most problematic ones, and to rank those from 1 (most problematic) to 5. For each factor, a dot indicates Ukraine's percentage for comparison. The information is drawn from the results of the 2006 and 2007 editions of the World Economic Forum's Executive Opinion Survey.

④ The Global Competitiveness Index in detail

Page 2 reports the country's rank on the components and indicators of the GCI. Next to the rank, a symbol indicates whether this rank is higher (+), lower (–), or the same (=) as Ukraine's.



Ukraine's Regions

① Key indicators

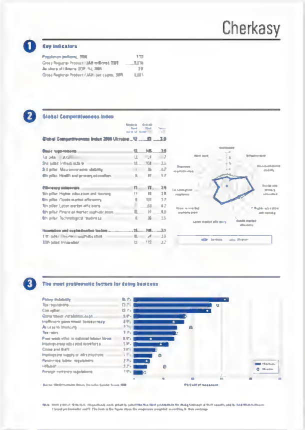
The first section presents a selection of key indicators for the region. The data for this section is derived from *Ukraine in Figures 2006* of the State Statistics Committee of Ukraine.

② Global Competitiveness Index

This section details the region's performance in the various components of the Global Competitiveness Index (GCI) 2006. The first column shows the region's rank among the 12 Ukraine's regions, while the second column shows its overall rank among the 134 economies – 12 regions and 122 countries – covered by the GCI. On the right-hand side, the chart shows the region's performance measured up against Ukraine's average performance (gray line). For reasons outlined in Chapter 4, the 10th pillar of competitiveness, market size, is not reported here.

③ The most problematic factors for doing business

This chart summarizes those factors seen by business executives as the most problematic for doing business in their region. From a list of 14 factors, respondents were asked to select the five most problematic ones, and to rank those from 1 (most problematic) to 5. The information is drawn from the Executive Opinion Survey conducted in the 12 regions in spring 2006. For each factor, the white dot represents the average percentage across all responses in Ukraine.


Cherkasy
1
Key indicators
2
Global Competitiveness Index
3
The most problematic factors for doing business

④ The Global Competitiveness Index in detail

Pages 2 and 3 provide detailed information on each component and indicator included in the GCI.

- **INDICATOR** For hard data indicators, identified by an asterisk *, units are indicated in parenthesis.
- **RANK/12 /134** These two columns present the rank of the region within Ukraine (/12) and within the whole sample (/134), respectively. Where regional data is not available, only the overall rank – based on Ukraine's national score – is reported. Next to the overall rank, a colored square indicates whether the indicator constitutes an advantage (■) or a disadvantage (■) for the region. In the GCI, the same rule is used for all those economies ranked 50th and below in the overall GCI ranking. This rule says that any indicators ranked higher than 51 are considered as advantages and that any variables ranked lower than 50 are considered as disadvantages.
- **SCORE** This column reports the region's score on each indicator; "n/a" indicates that regional data is not available, in which case only the national score is reported in the next column.
- **AT LEVEL OF** This column lists the country which immediately precedes the region under review in the overall ranking of each indicator. Where regional data is not available, the national rank is used to pick the closest country. If another Ukraine's region that precedes the region under review, then the country ranked two places higher up is listed. "Multiple" indicates that several countries share the preceding rank.
- **UKRAINE'S AVERAGE** The first column under this heading indicates whether the regional score is higher (+), lower (–), or the same (=) as Ukraine's average. This column is left blank if regional data is not available. The second column reports Ukraine's national score. For survey variables, the national score corresponds to the average across all the survey responses collected in Ukraine.
- **BEST PERFORMER** The two columns under this heading report the score and the name of the best performing region. "n/a" is used when regional data is not available.

Cherkasy

④ The Global Competitiveness Index in detail

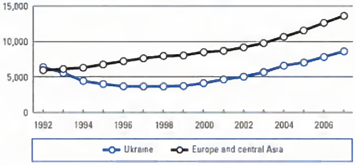
Ukraine

Ukraine

Key indicators

Total population (millions), 2007	46.4
GDP (US$ billions), 2007	131.2
GDP (US$) per capita, 2007	2,829.7
GDP (PPP, US$) per capita, 2007	6,309.8
GDP (PPP, US$) as share of world total (%), 2007	0.53

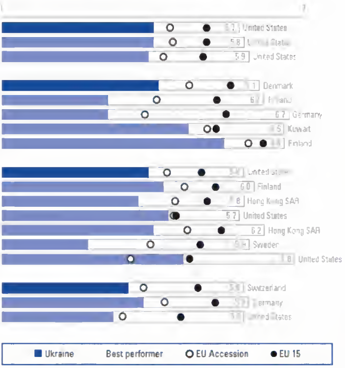
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

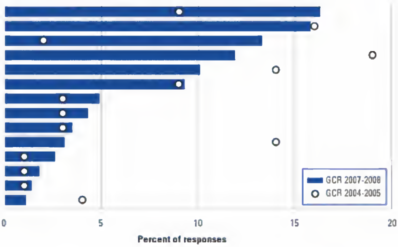
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**73**	**4.0**
GCI 2006-2007 (out of 122)	69	4.0
GCI 2005-2006 (out of 114)	64	3.9
Basic requirements	**90**	**4.1**
1st pillar: Institutions	115	3.1
2nd pillar: Infrastructure	77	3.1
3rd pillar: Macroeconomic stability	82	4.7
4th pillar: Health and primary education	74	5.4
Efficiency enhancers	**66**	**3.9**
5th pillar: Higher education and training	53	4.2
6th pillar: Goods market efficiency	101	3.7
7th pillar: Labor market efficiency	65	4.3
8th pillar: Financial market sophistication	85	4.0
9th pillar: Technological readiness	93	2.7
10th pillar: Market size	26	4.6
Innovation and sophistication factors	**75**	**3.5**
11th pillar: Business sophistication	81	3.8
12th pillar: Innovation	65	3.2

Stage of development: Transition from 1 to 2



The most problematic factors for doing business

Policy instability	16.3%
Corruption	15.8%
Government instability/coups	13.3%
Tax regulations	11.9%
Tax rates	10.1%
Inefficient government bureaucracy	9.3%
Inflation	4.9%
Inadequate supply of infrastructure	4.3%
Inadequately educated workforce	3.5%
Access to financing	3.1%
Poor work ethic in national labour force	2.6%
Restrictive labour regulations	1.8%
Foreign currency regulations	1.4%
Crime and theft	1.1%



Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Ukraine

The Global Competitiveness Index in detail

🟦 competitive **advantages** ▲/▼ improve/worsen between 2006-2007 and 2007-2008
■ competitive **disadvantages** ▲/▼ improve/worsen between 2005-2006 and 2006-2007

	INDICATOR	RANK		SCORE	CIS	EU ACCESSION	EU 15	BEST PERFORMER		EVOLUTION	
	Global Competitiveness Index	**73**		**4.0**	**3.8**	**4.3**	**5.1**	**5.7**	**United States**	▼	▲
	Basic requirements	**90**		**4.1**	**4.1**	**4.7**	**5.5**	**6.1**	**Denmark**	▼	▲
	Efficiency enhancers	**66**		**3.9**	**3.6**	**4.3**	**5.0**	**5.8**	**United States**	▼	▲
	Innovation and sophistication factors	**75**		**3.5**	**3.3**	**3.8**	**4.9**	**5.8**	**Switzerland**	▲	▼
	1st pillar: Institutions	**115**		**3.1**	**3.4**	**4.1**	**5.3**	**6.2**	**Finland**	▼	▲
1.01	Property rights	118	■	3.3	3.7	4.9	6.0	6.7	Germany	▼	▲
1.02	Intellectual property protection	108	■	2.7	3.0	3.9	5.6	6.5	Germany	▲	▲
1.03	Diversion of public funds	85	■	3.2	3.3	3.9	5.5	6.6	Denmark	▼	▲
1.04	Public trust of politicians	107	■	1.8	2.4	2.6	4.2	6.4	Singapore	▼	▲
1.05	Judicial independence	111	■	2.5	2.8	4.1	5.6	6.5	Germany	▲	▲
1.06	Favoritism in decisions of government officials	97	■	2.6	2.8	2.9	4.4	5.7	Finland	▲	▲
1.07	Wastefulness of government spending	111	■	2.6	3.2	3.2	4.0	5.9	Singapore	▲	▲
1.08	Burden of government regulation	104	■	2.7	3.0	3.1	3.2	5.3	Singapore	▲	▲
1.09	Efficiency of legal framework	112	■	2.8	3.1	3.8	5.2	6.5	Denmark	▼	▲
1.10	Transparency of government policymaking	119	■	3.1	3.4	3.9	4.9	6.1	Singapore	▼	▲
1.11	Business costs of terrorism	66	■	5.4	5.2	5.8	5.6	6.6	Finland	▲	▲
1.12	Business costs of crime and violence	72	■	4.4	4.6	5.1	5.6	6.7	Syria	▲	▲
1.13	Organized crime	97	■	4.2	4.6	5.3	6.0	6.7	Iceland	▲	▲
1.14	Reliability of police services	105	■	3.1	3.6	4.3	5.7	6.7	Finland	▼	▲
1.15	Ethical behavior of firms	128	■	3.1	3.5	4.2	5.6	6.6	Finland	▼	▼
1.16	Strength of auditing and reporting standards	118	■	3.5	3.9	5.0	5.9	6.3	Germany	▼	▼
1.17	Efficacy of corporate boards	101	■	4.2	4.5	4.7	5.3	6.1	Sweden	▼	▼
1.18	Protection of minority shareholders' interests	127	■	3.1	3.4	4.3	5.5	6.4	Sweden	▲	▲
	2nd pillar: Infrastructure	**77**		**3.1**	**3.0**	**3.8**	**5.5**	**6.7**	**Germany**	▼	▼
2.01	Quality of overall infrastructure	77	■	3.1	3.1	4.0	5.6	6.7	Switzerland	▼	▼
2.02	Quality of roads	116	■	2.2	2.7	3.5	5.5	6.7	France	▼	n/a
2.03	Quality of railroad infrastructure	31	🟦	4.0	3.3	3.5	5.0	6.8	Switzerland	▼	▼
2.04	Quality of port infrastructure	86	■	3.4	2.8	4.2	5.4	6.8	Singapore	▼	▼
2.05	Quality of air transport infrastructure	116	■	3.2	3.9	4.5	5.9	6.9	Singapore	▼	▼
2.06	Available seat kilometers (per week, in millions)*	59	■	158.9	244.8	90.6	1,571.8	33,200.4	United States	▲	n/a
2.07	Quality of electricity supply	88	■	3.9	3.7	5.2	6.3	6.9	Denmark	▲	▼
2.08	Main telephone lines (per 100 pop.)*	52	■	25.8	15.9	33.3	50.6	69.0	Switzerland	▲	▲
	3rd pillar: Macroeconomic stability	**82**		**4.7**	**4.7**	**5.1**	**5.3**	**6.6**	**Kuwait**	▲	▲
3.01	Central government balance (% of GDP)*	82	■	-1.9	0.3	-1.6	-0.3	42.1	Libya	▲	▲
3.02	National savings rate (% of GDP)*	77	■	20.1	24.0	17.9	21.6	65.2	Kuwait	▼	▼
3.03	Annual percent change in consumer price index	106	■	9.0	9.6	4.0	2.3	0.2	Japan	▲	▼
3.04	Interest rate spread (%)*	90	■	7.6	8.8	3.9	3.4	0.6	Netherlands	▲	▲
3.05	Gross debt (% of GDP)*	17	🟦	16.5	25.4	33.5	55.9	0.0	Timor-Leste	▲	▲
	4th pillar: Health and primary education	**74**		**5.4**	**5.1**	**5.9**	**6.2**	**6.6**	**Finland**	▼	▲
4.01	Business impact of malaria	86	■	5.7	5.7	6.5	6.8	6.9	Iceland	▲	▼
4.02	Malaria incidence (cases per 100,000 pop.)*	1	🟦	0.0	10.3	0.0	0.0	0.0	multiple (57)	=	=
4.03	Business impact of tuberculosis	110	■	4.5	5.0	6.1	6.6	6.9	Denmark	▼	▼
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	86	■	99.4	116.1	23.9	11.5	2.8	Iceland	▲	▼
4.05	Business impact of HIV/AIDS	88	■	4.9	5.1	5.7	6.1	6.6	Iceland	▼	▼
4.06	HIV prevalence (% of adult pop.)*	104	■	1.4	0.5	0.4	0.3	0.1	multiple (24)	=	=
4.07	Infant mortality (deaths per 1,000 live births)*	59	■	14.0	46.4	7.5	4.1	2.0	multiple (2)	=	=
4.08	Life expectancy at birth (years)*	89	■	67.0	65.9	74.3	79.1	82.0	multiple (2)	=	=
4.09	Quality of primary education	49	🟦	4.1	3.4	4.7	5.1	6.5	Finland	n/a	n/a
4.10	Primary education enrolment (net rate, %)*	106	■	83.3	88.1	92.5	96.9	99.8	Japan	▲	▼
4.11	Education expenditure (% of GNI)*	52	■	4.4	4.2	4.9	5.1	9.4	Uzbekistan	=	n/a
	5th pillar: Higher education and training	**53**		**4.2**	**3.8**	**4.6**	**5.2**	**6.0**	**Finland**	▲	▼
5.01	Secondary education enrolment (gross rate, %)*	54	■	88.7	87.9	97.5	106.5	148.6	Australia	▼	▼
5.02	Tertiary education enrolment (gross rate, %)*	17	🟦	65.5	37.2	52.5	61.4	89.9	Korea	▼	▲
5.03	Quality of the educational system	47	🟦	4.0	3.5	4.1	4.7	6.0	Singapore	▲	▲
5.04	Quality of math and science education	44	🟦	4.6	4.0	5.0	4.9	6.3	Singapore	▲	▼
5.05	Quality of management schools	85	■	3.7	3.3	4.4	5.2	6.0	France	▲	▼
5.06	Internet access in schools	78	■	3.2	3.2	4.6	5.3	6.5	Iceland	▲	▲
5.07	Local availability of specialized research and training services	85	■	3.6	3.3	4.2	5.2	6.0	Switzerland	▲	▼
5.08	Extent of staff training	98	■	3.3	3.2	4.0	5.0	5.9	Denmark	▲	▼
	6th pillar: Goods market efficiency	**101**		**3.7**	**3.8**	**4.4**	**5.1**	**5.8**	**Hong Kong SAR**	▼	▲
6.01	Intensity of local competition	93	■	4.4	4.2	5.2	5.6	6.3	Germany	▼	▲
6.02	Extent of market dominance	95	■	3.2	3.2	4.1	5.2	6.2	Germany	▼	▲
6.03	Effectiveness of anti-monopoly policy	98	■	3.2	3.2	4.3	5.4	6.1	Germany	▼	▼
6.04	Extent and effect of taxation	123	■	2.4	3.1	3.5	3.3	6.3	Bahrain	▼	▲

Ukraine

The Global Competitiveness Index in detail

	INDICATOR	RANK		SCORE	CIS	EU ACCESSION	EU 15	BEST PERFORMER	EVOLUTION	
6.05	Total tax rate (% of profits)*	101	■	60.3	61.0	46.6	52.8	14.9 Saudi Arabia	▲	n/a
6.06	Number of procedures required to start a business*	65	■	10.0	9.5	7.6	6.9	2.0 multiple (3)	▲	=
6.07	Number of days required to start a business*	65	■	33.0	32.1	29.8	19.7	2.0 Australia	▲	=
6.08	Agricultural policy costs	129	■	2.7	3.4	3.6	3.9	5.6 New Zealand	▼	▲
6.09	Prevalence of trade barriers	123	■	3.6	3.9	5.1	5.6	6.3 Hong Kong SAR	▼	▼
6.10	Trade-weighted tariff rate (% duty)*	41	🟦	3.9	6.2	4.8	3.4	0.0 multiple (2)	=	n/a
6.11	Prevalence of foreign ownership	124	■	3.8	4.4	5.3	5.8	6.5 Ireland	▲	▲
6.12	Business impact of rules on FDI	123	■	3.7	4.4	5.2	5.7	6.5 Ireland	▲	▲
6.13	Burden of customs procedures	118	■	2.7	3.0	4.3	5.1	6.4 Singapore	n/a	n/a
6.14	Degree of customer orientation	74	■	4.5	4.5	4.7	5.4	6.1 Austria	▲	▼
6.15	Buyer sophistication	82	■	3.5	3.4	3.9	5.1	5.7 Switzerland	▼	▲
	7th pillar: Labor market efficiency	**65**		**4.3**	**4.5**	**4.4**	**4.5**	**5.7 United States**	▲	▲
7.01	Cooperation in labor-employer relations	86	■	4.4	4.8	4.5	4.9	6.3 Denmark	▼	▼
7.02	Flexibility of wage determination	49	🟦	5.4	5.5	5.4	3.8	6.4 Hong Kong SAR	▲	▲
7.03	Non-wage labor costs (% of worker's salary)*	120	■	38.8	26.1	29.6	27.0	0.0 multiple (7)	▲	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*	103	■	55.0	35.5	45.4	41.4	0.0 multiple (3)	=	▼
7.05	Hiring and firing practices	16	🟦	4.9	5.0	3.6	3.1	5.8 Singapore	▲	▼
7.06	Firing costs (in weeks of wage)*	17	🟦	13.0	17.8	21.6	39.3	0.0 multiple (3)	=	=
7.07	Pay and productivity	26	🟦	4.8	4.7	4.6	4.2	6.0 Hong Kong SAR	▲	▼
7.08	Reliance on professional management	102	■	3.9	3.9	4.5	5.5	6.4 Sweden	▲	▼
7.09	Brain drain	93	■	2.7	2.8	3.3	4.5	6.0 United States	▲	▼
7.10	Female participation in labor force (% of male participation)*	26	🟦	86.9	82.4	81.6	81.6	102.7 Mozambique	=	n/a
	8th pillar: Financial market sophistication	**85**		**4.0**	**3.7**	**4.7**	**5.4**	**6.2 Hong Kong SAR**	▼	▲
8.01	Financial market sophistication	90	■	3.3	3.2	4.3	5.9	6.7 Switzerland	▲	▲
8.02	Financing through local equity market	93	■	3.8	3.5	4.4	5.4	6.2 Sweden	▼	▼
8.03	Ease of access to loans	71	■	3.2	2.8	3.9	4.6	5.5 Denmark	▲	▲
8.04	Venture capital availability	56	■	3.2	2.8	3.4	4.4	5.3 United States	▲	▲
8.05	Restriction on capital flows	102	■	3.9	4.1	5.4	5.8	6.6 Uruguay	n/a	n/a
8.06	Strength of Investor Protection (0-10, 10 is best)*	105	■	3.7	4.5	5.4	5.6	9.7 New Zealand	=	n/a
8.07	Soundness of banks	119	■	4.5	4.7	5.7	6.5	6.9 Switzerland	▲	▲
8.08	Regulation of securities exchanges	115	■	3.2	3.3	4.8	5.7	6.3 Sweden	n/a	n/a
8.09	Strength of legal rights (0-10, 10 is best)*	8	🟦	8.0	5.2	5.7	5.9	10.0 multiple (2)	=	▲
	9th pillar: Technological readiness	**93**		**2.7**	**2.7**	**4.0**	**4.9**	**5.9 Sweden**	▲	▼
9.01	Availability of latest technologies	97	■	3.4	3.4	4.5	5.6	6.5 Sweden	▲	▼
9.02	Firm-level technology absorption	91	■	4.4	4.2	4.8	5.5	6.5 Iceland	▲	▲
9.03	Laws relating to ICT	83	■	3.3	3.3	4.3	5.2	6.0 Denmark	▲	▼
9.04	FDI and technology transfer	106	■	4.2	4.4	5.1	5.1	6.4 Ireland	▲	▲
9.05	Mobile telephone subscribers (per 100 pop.)*	79	■	37.0	26.7	90.3	104.0	154.8 Luxembourg	▲	▲
9.06	Internet users (per 100 pop.)*	77	■	9.8	6.7	34.8	47.9	87.8 Iceland	▲	▲
9.07	Personal computers (per 100 pop.)*	88	■	3.9	4.8	23.8	48.4	86.2 Switzerland	▲	▲
9.08	Broadband Internet subscribers (per 100 pop.)*	56	■	1.4	0.5	6.2	15.4	26.5 Iceland	=	n/a
	10th pillar: Market size	**26**		**4.6**	**3.2**	**3.6**	**4.7**	**6.8 United States**	▼	▲
10.01	Domestic market size index*	27	🟦	4.5	3.2	3.4	4.6	7.0 United States	▼	▲
10.02	Foreign market size index*	32	🟦	5	3	4	5	7 China	▼	▼
	11th pillar: Business sophistication	**81**		**3.8**	**3.5**	**4.2**	**5.2**	**5.9 Germany**	▲	▼
11.01	Local supplier quantity	64	■	4.7	4.1	4.8	5.5	6.3 Germany	▲	▼
11.02	Local supplier quality	80	■	4.1	3.7	4.7	5.7	6.5 Germany	▲	▼
11.03	State of cluster development	89	■	3.2	3.0	3.8	4.3	5.7 Taiwan, China	▲	▼
11.04	Nature of competitive advantage	78	■	3.3	3.1	3.5	5.4	6.3 Germany	▲	▲
11.05	Value chain breadth	78	■	3.4	3.2	4.1	5.5	6.3 Switzerland	▲	▼
11.06	Control of international distribution	46	🟦	4.3	3.8	4.0	4.8	5.5 Iceland	▲	▼
11.07	Production process sophistication	69	■	3.6	3.5	4.0	5.4	6.3 Germany	▲	▼
11.08	Extent of marketing	87	■	3.8	3.5	4.6	5.6	6.3 United States	▲	▼
11.09	Willingness to delegate authority	101	■	3.2	3.2	3.9	5.0	6.3 Sweden	▲	▲
	12th pillar: Innovation	**65**		**3.2**	**3.0**	**3.4**	**4.6**	**5.8 United States**	▲	▼
12.01	Capacity for innovation	40	🟦	3.7	3.2	3.6	4.9	6.1 Germany	▲	▼
12.02	Quality of scientific research institutions	60	■	3.9	3.7	4.1	5.0	6.2 Switzerland	▲	▼
12.03	Company spending on R&D	67	■	3.2	3.0	3.4	4.6	6.1 Switzerland	▲	▼
12.04	University-industry research collaboration	65	■	3.1	2.8	3.3	4.4	5.6 United States	▲	▼
12.05	Government procurement of advanced technology products	75	■	3.6	3.4	3.6	4.2	5.5 Singapore	▲	▲
12.06	Availability of scientists and engineers	70	■	4.3	4.0	4.6	5.2	6.0 Finland	▼	▼
12.07	USPTA utility patents granted in 2006 (per mio pop.)*	58	■	0.5	0.3	3.0	65.9	298.4 United States	▲	▼

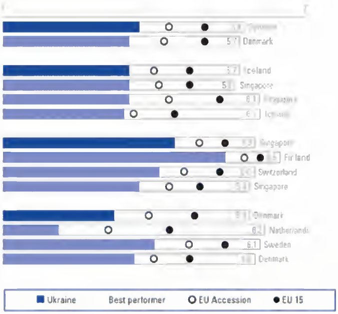
* Hard data

Note. For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 165.

Ukraine

Networked Readiness Index

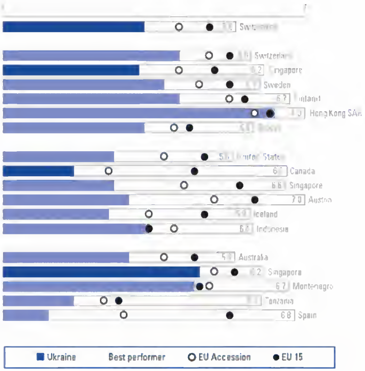
	Rank (out of 127)	Score (1–7)
Networked Readiness Index 2007-2008	**70**	**3.7**
NRI 2006-2007	75	3.5
Environment Component	**70**	**3.5**
Market Environment	94	3.5
Political and Regulatory Environment	94	3.5
Infrastructure Environment	42	3.4
Readiness Component	**72**	**4.4**
Individual Readiness	58	5.4
Business Readiness	80	4.1
Government Readiness	91	3.7
Usage Component	**71**	**3.2**
Individual Usage	54	2.1
Business Usage	90	4.0
Government Usage	67	3.6



Source: World Economic Forum,
The Global Information Technology Report 2007-2008

Travel & Tourism Competitiveness Index

	Rank (out of 130)	Score (1–7)
Travel & Tourism Competitiveness Report 2008	**77**	**3.8**
T&T regulatory framework	59	4.5
Policy rules and regulations	100	3.7
Environmental sustainability	83	4.2
Safety and security	93	4.5
Health and hygiene	17	6.4
Prioritization of travel & tourism	96	3.8
T&T business environment and infrastructure	78	3.2
Air transport infrastructure	98	2.4
Ground transport infrastructure	84	3.2
Tourism infrastructure	62	3.5
ICT infrastructure	52	3.1
Price competitiveness in the T&T industry	115	3.9
T&T human, cultural, and natural resources	100	3.5
Human resources	80	4.9
Affinity for travel & tourism	62	4.8
Natural resources	104	2.4
Cultural resources	84	1.9



Source: World Economic Forum,
The Travel & Tourism Competitiveness Report 2008

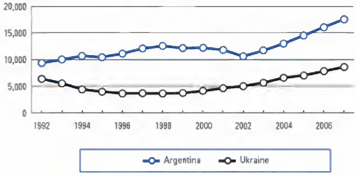
Comparator Countries

Argentina

Key indicators

Total population (millions), 2007	39.4
GDP (US$ billions), 2007	248.3
GDP (US$) per capita, 2007	6,309.8
GDP (PPP, US$) per capita, 2007	17,558.9
GDP (PPP, US$) as share of world total (%), 2007	0.95

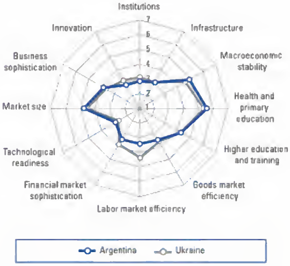
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

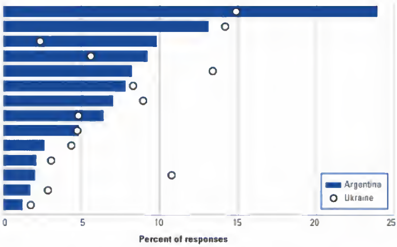
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**85**	**3.9**
GCI 2006-2007 (out of 122)	70	4.0
GCI 2005-2006 (out of 114)	71	3.8
Basic requirements	**83**	**4.1**
Institutions	123	3.0
Infrastructure	81	3.0
Macroeconomic stability	64	4.9
Health and primary education	54	5.6
Efficiency enhancers	**78**	**3.8**
Higher education and training	51	4.2
Goods market efficiency	115	3.5
Labor market efficiency	129	3.5
Financial market sophistication	114	3.5
Technological readiness	78	3.0
Market size	23	4.8
Innovation and sophistication factors	**83**	**3.4**
Business sophistication	75	4.0
Innovation	91	2.9

Stage of development: 2



The most problematic factors for doing business

Policy instability	23.9%
Corruption	13.1%
Restrictive labour regulations	9.8%
Access to financing	9.2%
Tax regulations	8.2%
Inefficient government bureaucracy	7.8%
Tax rates	7.0%
Inflation	6.4%
Inadequate supply of infrastructure	4.8%
Inadequately educated workforce	2.6%
Poor work ethic in national labour force	2.1%
Government instability/coups	2.0%
Crime and theft	1.7%
Foreign currency regulations	1.2%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Argentina

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**85**	–
	Basic requirements	**83**	+
	Efficiency enhancers	**78**	–
	Innovation and sophistication factors	**83**	–
	1st pillar: Institutions	**123**	–
1.01	Property rights	127	–
1.02	Intellectual property protection	100	+
1.03	Diversion of public funds	117	–
1.04	Public trust of politicians	125	–
1.05	Judicial independence	123	–
1.06	Favoritism in decisions of government officials	124	–
1.07	Wastefulness of government spending	120	–
1.08	Burden of government regulation	116	–
1.09	Efficiency of legal framework	125	–
1.10	Transparency of government policymaking	127	–
1.11	Business costs of terrorism	12	+
1.12	Business costs of crime and violence	106	–
1.13	Organized crime	90	+
1.14	Reliability of police services	125	–
1.15	Ethical behavior of firms	110	+
1.16	Strength of auditing and reporting standards	92	+
1.17	Efficacy of corporate boards	64	+
1.18	Protection of minority shareholders' interests	116	+
	2nd pillar: Infrastructure	**81**	–
2.01	Quality of overall infrastructure	80	–
2.02	Quality of roads	84	+
2.03	Quality of railroad infrastructure	78	–
2.04	Quality of port infrastructure	94	–
2.05	Quality of air transport infrastructure	113	+
2.06	Available seat kilometers*	29	+
2.07	Quality of electricity supply	95	–
2.08	Telephone lines*	55	–
	3rd pillar: Macroeconomic stability	**64**	+
3.01	Government surplus/deficit*	34	+
3.02	National savings rate*	44	+
3.03	Inflation*	118	–
3.04	Interest rate spread*	13	+
3.05	Government debt*	94	–
	4th pillar: Health and primary education	**54**	+
4.01	Business impact of malaria	33	+
4.02	Malaria incidence*	66	–
4.03	Business impact of tuberculosis	24	+
4.04	Tuberculosis incidence*	57	+
4.05	Business impact of HIV/AIDS	54	+
4.06	HIV prevalence*	84	+
4.07	Infant mortality*	61	–
4.08	Life expectancy*	40	+
4.09	Quality of primary education	93	–
4.10	Primary enrollment*	10	+
4.11	Education expenditure*	65	–
	5th pillar: Higher education and training	**51**	+
5.01	Secondary enrollment*	67	–
5.02	Tertiary enrollment*	19	–
5.03	Quality of the educational system	105	–
5.04	Quality of math and science education	95	–
5.05	Quality of management schools	30	+
5.06	Internet access in schools	65	–
5.07	Local availability of research and training services	45	+
5.08	Extent of staff training	75	+
	6th pillar: Goods market efficiency	**115**	–
6.01	Intensity of local competition	109	–
6.02	Extent of market dominance	92	+
6.03	Effectiveness of anti-monopoly policy	89	+
6.04	Extent and effect of taxation	129	–
6.05	Total tax rate*	121	–
6.06	No. of procedures required to start a business*	115	–
6.07	Time required to start a business*	63	+
6.08	Agricultural policy costs	90	+
6.09	Prevalence of trade barriers	129	–
6.10	Trade-weighted tariff rate*	103	–
6.11	Prevalence of foreign ownership	88	+
6.12	Business impact of rules on FDI	119	+
6.13	Burden of customs procedures	109	+
6.14	Degree of customer orientation	106	–
6.15	Buyer sophistication	61	+
	7th pillar: Labor market efficiency	**129**	–
7.01	Cooperation in labor-employer relations	129	–
7.02	Flexibility of wage determination	119	–
7.03	Non-wage labor costs*	90	+
7.04	Rigidity of employment*	70	+
7.05	Hiring and firing practices	120	–
7.06	Firing costs*	119	–
7.07	Pay and productivity	113	–
7.08	Reliance on professional management	45	+
7.09	Brain drain	65	+
7.10	Female participation in labor force*	70	–
	8th pillar: Financial market sophistication	**114**	–
8.01	Financial market sophistication	75	+
8.02	Financing through local equity market	95	–
8.03	Ease of access to loans	114	–
8.04	Venture capital availability	83	–
8.05	Restriction on capital flows	120	–
8.06	Strength of investor protection*	77	+
8.07	Soundness of banks	131	–
8.08	Regulation of securities exchanges	77	+
8.09	Legal rights index*	94	–
	9th pillar: Technological readiness	**78**	+
9.01	Availability of latest technologies	87	+
9.02	Firm-level technology absorption	99	–
9.03	Laws relating to ICT	99	–
9.04	FDI and technology transfer	102	+
9.05	Mobile telephone subscribers*	56	+
9.06	Internet users*	57	+
9.07	Personal computers*	61	+
9.08	Broadband Internet subscribers*	48	+
	10th pillar: Market size	**23**	+
10.01	Domestic market size*	20	+
10.02	Foreign market size*	34	–
	11th pillar: Business sophistication	**75**	+
11.01	Local supplier quantity	63	+
11.02	Local supplier quality	68	+
11.03	State of cluster development	63	+
11.04	Nature of competitive advantage	125	–
11.05	Value chain breadth	103	–
11.06	Control of international distribution	107	–
11.07	Production process sophistication	64	+
11.08	Extent of marketing	36	+
11.09	Willingness to delegate authority	52	+
	12th pillar: Innovation	**91**	–
12.01	Capacity for innovation	81	–
12.02	Quality of scientific research institutions	87	–
12.03	Company spending on R&D	87	–
12.04	University-industry research collaboration	80	–
12.05	Gov't procurement of advanced tech products	113	–
12.06	Availability of scientists and engineers	76	–
12.07	Utility patents*	47	+

* Hard data

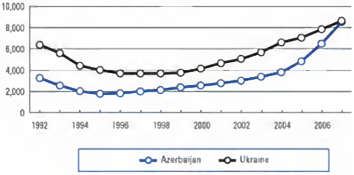
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Azerbaijan

Key indicators

Total population (millions), 2007	8.6
GDP (US$ billions), 2007	31.1
GDP (US$) per capita, 2007	3,633.0
GDP (PPP, US$) per capita, 2007	8,520.6
GDP (PPP, US$) as share of world total (%), 2007	0.10

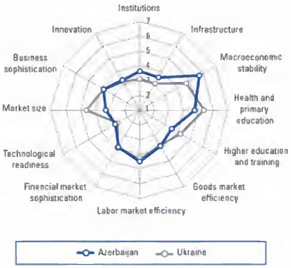
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

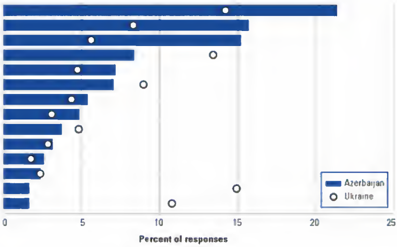
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**66**	**4.1**
GCI 2006-2007 (out of 122)	62	4.1
GCI 2005-2006 (out of 114)	60	3.9
Basic requirements	**65**	**4.4**
Institutions	83	3.6
Infrastructure	60	3.6
Macroeconomic stability	23	5.7
Health and primary education	103	4.7
Efficiency enhancers	**84**	**3.7**
Higher education and training	89	3.5
Goods market efficiency	95	3.8
Labor market efficiency	46	4.5
Financial market sophistication	91	3.9
Technological readiness	83	2.9
Market size	71	3.3
Innovation and sophistication factors	**68**	**3.6**
Business sophistication	80	3.8
Innovation	54	3.4

Stage of development: Transition from 1 to 2



The most problematic factors for doing business

Corruption	21.3%
Inefficient government bureaucracy	15.7%
Access to financing	15.2%
Tax regulations	8.4%
Inadequate supply of infrastructure	7.1%
Tax rates	7.0%
Inadequately educated workforce	5.4%
Poor work ethic in national labour force	4.8%
Inflation	3.7%
Crime and theft	3.1%
Foreign currency regulations	2.6%
Restrictive labour regulations	2.3%
Policy instability	1.7%
Government instability/coups	1.6%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Azerbaijan

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**66**	+
	Basic requirements	**65**	+
	Efficiency enhancers	**84**	–
	Innovation and sophistication factors	**68**	+
	1st pillar: Institutions	**83**	+
1.01	Property rights	103	+
1.02	Intellectual property protection	93	+
1.03	Diversion of public funds	91	–
1.04	Public trust of politicians	61	+
1.05	Judicial independence	108	+
1.06	Favoritism in decisions of government officials	85	+
1.07	Wastefulness of government spending	59	+
1.08	Burden of government regulation	39	+
1.09	Efficiency of legal framework	86	+
1.10	Transparency of government policymaking	97	+
1.11	Business costs of terrorism	73	–
1.12	Business costs of crime and violence	27	+
1.13	Organized crime	54	+
1.14	Reliability of police services	71	+
1.15	Ethical behavior of firms	62	+
1.16	Strength of auditing and reporting standards	94	+
1.17	Efficacy of corporate boards	100	+
1.18	Protection of minority shareholders' interests	119	+
	2nd pillar: Infrastructure	**60**	+
2.01	Quality of overall infrastructure	57	+
2.02	Quality of roads	66	+
2.03	Quality of railroad infrastructure	32	–
2.04	Quality of port infrastructure	47	+
2.05	Quality of air transport infrastructure	50	+
2.06	Available seat kilometers*	90	–
2.07	Quality of electricity supply	94	–
2.08	Telephone lines*	79	–
	3rd pillar: Macroeconomic stability	**23**	+
3.01	Government surplus/deficit*	42	+
3.02	National savings rate*	3	+
3.03	Inflation*	103	+
3.04	Interest rate spread*	86	+
3.05	Government debt*	9	+
	4th pillar: Health and primary education	**103**	–
4.01	Business impact of malaria	87	–
4.02	Malaria incidence*	78	–
4.03	Business impact of tuberculosis	89	+
4.04	Tuberculosis incidence*	78	+
4.05	Business impact of HIV/AIDS	65	+
4.06	HIV prevalence*	25	+
4.07	Infant mortality*	109	–
4.08	Life expectancy*	96	–
4.09	Quality of primary education	111	–
4.10	Primary enrollment*	103	+
4.11	Education expenditure*	80	–
	5th pillar: Higher education and training	**89**	–
5.01	Secondary enrollment*	72	–
5.02	Tertiary enrollment*	92	–
5.03	Quality of the educational system	98	–
5.04	Quality of math and science education	84	–
5.05	Quality of management schools	118	–
5.06	Internet access in schools	80	–
5.07	Local availability of research and training services	77	+
5.08	Extent of staff training	85	+
	6th pillar: Goods market efficiency	**95**	+
6.01	Intensity of local competition	118	–
6.02	Extent of market dominance	89	+
6.03	Effectiveness of anti-monopoly policy	114	–
6.04	Extent and effect of taxation	56	+
6.05	Total tax rate*	60	+
6.06	No. of procedures required to start a business*	115	–
6.07	Time required to start a business*	100	–
6.08	Agricultural policy costs	81	+
6.09	Prevalence of trade barriers	103	+
6.10	Trade-weighted tariff rate*	61	–
6.11	Prevalence of foreign ownership	53	+
6.12	Business impact of rules on FDI	85	+
6.13	Burden of customs procedures	78	+
6.14	Degree of customer orientation	68	+
6.15	Buyer sophistication	81	+
	7th pillar: Labor market efficiency	**46**	+
7.01	Cooperation in labor-employer relations	75	+
7.02	Flexibility of wage determination	46	+
7.03	Non-wage labor costs*	88	+
7.04	Rigidity of employment*	63	+
7.05	Hiring and firing practices	6	+
7.06	Firing costs*	32	–
7.07	Pay and productivity	66	–
7.08	Reliance on professional management	128	–
7.09	Brain drain	85	+
7.10	Female participation in labor force*	36	–
	8th pillar: Financial market sophistication	**91**	–
8.01	Financial market sophistication	81	+
8.02	Financing through local equity market	106	–
8.03	Ease of access to loans	91	–
8.04	Venture capital availability	65	–
8.05	Restriction on capital flows	107	–
8.06	Strength of investor protection*	87	+
8.07	Soundness of banks	113	+
8.08	Regulation of securities exchanges	114	+
8.09	Legal rights index*	17	–
	9th pillar: Technological readiness	**83**	+
9.01	Availability of latest technologies	71	+
9.02	Firm-level technology absorption	59	+
9.03	Laws relating to ICT	61	+
9.04	FDI and technology transfer	72	+
9.05	Mobile telephone subscribers*	88	–
9.06	Internet users*	81	–
9.07	Personal computers*	98	–
9.08	Broadband Internet subscribers*	101	–
	10th pillar: Market size	**71**	–
10.01	Domestic market size*	76	–
10.02	Foreign market size*	67	–
	11th pillar: Business sophistication	**80**	+
11.01	Local supplier quantity	87	–
11.02	Local supplier quality	90	–
11.03	State of cluster development	67	+
11.04	Nature of competitive advantage	64	+
11.05	Value chain breadth	84	–
11.06	Control of international distribution	57	–
11.07	Production process sophistication	51	+
11.08	Extent of marketing	79	+
11.09	Willingness to delegate authority	97	+
	12th pillar: Innovation	**54**	+
12.01	Capacity for innovation	46	–
12.02	Quality of scientific research institutions	57	+
12.03	Company spending on R&D	51	+
12.04	University-industry research collaboration	60	+
12.05	Gov't procurement of advanced tech products	38	+
12.06	Availability of scientists and engineers	52	+
12.07	Utility patents*	75	–

* Hard data

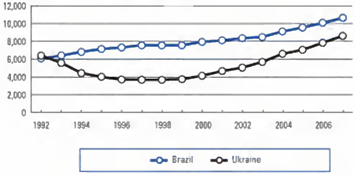
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Brazil

Key indicators

Total population (millions), 2007	189.3
GDP (US$ billions), 2007	1,295.4
GDP (US$) per capita, 2007	6,841.6
GDP (PPP, US$) per capita, 2007	10,636.7
GDP (PPP, US$) as share of world total (%), 2007	2.55

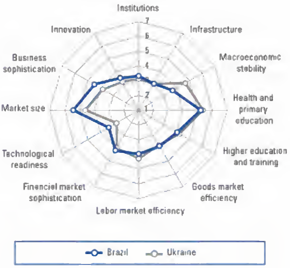
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

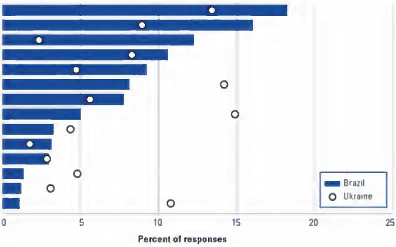
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**72**	**4.0**
GCI 2006-2007 (out of 122)	66	4.1
GCI 2005-2006 (out of 114)	50	4.1
Basic requirements	**101**	**3.8**
Institutions	104	3.3
Infrastructure	78	3.1
Macroeconomic stability	126	3.7
Health and primary education	84	5.2
Efficiency enhancers	**55**	**4.1**
Higher education and training	64	4.0
Goods market efficiency	97	3.8
Labor market efficiency	104	4.0
Financial market sophistication	73	4.1
Technological readiness	55	3.3
Market size	10	5.4
Innovation and sophistication factors	**41**	**4.0**
Business sophistication	39	4.5
Innovation	44	3.5

Stage of development: 2



The most problematic factors for doing business

Tax regulations	18.2%
Tax rates	16.0%
Restrictive labour regulations	12.2%
Inefficient government bureaucracy	10.6%
Inadequate supply of infrastructure	9.2%
Corruption	8.1%
Access to financing	7.8%
Policy instability	5.0%
Inadequately educated workforce	3.3%
Foreign currency regulations	3.1%
Crime and theft	3.0%
Inflation	1.3%
Poor work ethic in national labour force	1.2%
Government instability/coups	1.1%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Brazil

The Global Competitiveness Index in detail

+ better than Ukraine   **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**72**	+
	Basic requirements	**101**	–
	Efficiency enhancers	**55**	+
	Innovation and sophistication factors	**41**	+
	1st pillar: Institutions	**104**	+
1.01	Property rights	70	+
1.02	Intellectual property protection	73	+
1.03	Diversion of public funds	124	–
1.04	Public trust of politicians	126	–
1.05	Judicial independence	89	+
1.06	Favoritism in decisions of government officials	91	+
1.07	Wastefulness of government spending	127	–
1.08	Burden of government regulation	128	–
1.09	Efficiency of legal framework	105	+
1.10	Transparency of government policymaking	107	+
1.11	Business costs of terrorism	10	+
1.12	Business costs of crime and violence	121	–
1.13	Organized crime	125	–
1.14	Reliability of police services	120	–
1.15	Ethical behavior of firms	98	+
1.16	Strength of auditing and reporting standards	63	+
1.17	Efficacy of corporate boards	65	+
1.18	Protection of minority shareholders' interests	46	+
	2nd pillar: Infrastructure	**78**	–
2.01	Quality of overall infrastructure	97	–
2.02	Quality of roads	110	+
2.03	Quality of railroad infrastructure	91	–
2.04	Quality of port infrastructure	116	–
2.05	Quality of air transport infrastructure	87	+
2.06	Available seat kilometers*	12	+
2.07	Quality of electricity supply	61	+
2.08	Telephone lines*	60	–
	3rd pillar: Macroeconomic stability	**126**	–
3.01	Government surplus/deficit*	98	–
3.02	National savings rate*	82	–
3.03	Inflation*	61	+
3.04	Interest rate spread*	127	–
3.05	Government debt*	99	–
	4th pillar: Health and primary education	**84**	–
4.01	Business impact of malaria	57	+
4.02	Malaria incidence*	105	–
4.03	Business impact of tuberculosis	47	+
4.04	Tuberculosis incidence*	69	+
4.05	Business impact of HIV/AIDS	61	+
4.06	HIV prevalence*	77	+
4.07	Infant mortality*	91	–
4.08	Life expectancy*	81	+
4.09	Quality of primary education	123	–
4.10	Primary enrollment*	45	+
4.11	Education expenditure*	64	–
	5th pillar: Higher education and training	**64**	–
5.01	Secondary enrollment*	21	+
5.02	Tertiary enrollment*	75	–
5.03	Quality of the educational system	120	–
5.04	Quality of math and science education	117	–
5.05	Quality of management schools	66	+
5.06	Internet access in schools	70	+
5.07	Local availability of research and training services	32	+
5.08	Extent of staff training	45	+
	6th pillar: Goods market efficiency	**97**	+
6.01	Intensity of local competition	45	+
6.02	Extent of market dominance	45	+
6.03	Effectiveness of anti-monopoly policy	47	+
6.04	Extent and effect of taxation	131	–
6.05	Total tax rate*	109	–
6.06	No. of procedures required to start a business*	121	–
6.07	Time required to start a business*	123	–
6.08	Agricultural policy costs	40	+
6.09	Prevalence of trade barriers	98	+
6.10	Trade-weighted tariff rate*	80	–
6.11	Prevalence of foreign ownership	95	+
6.12	Business impact of rules on FDI	96	+
6.13	Burden of customs procedures	124	–
6.14	Degree of customer orientation	61	+
6.15	Buyer sophistication	65	+
	7th pillar: Labor market efficiency	**104**	–
7.01	Cooperation in labor-employer relations	96	–
7.02	Flexibility of wage determination	108	–
7.03	Non-wage labor costs*	119	+
7.04	Rigidity of employment*	73	+
7.05	Hiring and firing practices	121	–
7.06	Firing costs*	65	–
7.07	Pay and productivity	93	–
7.08	Reliance on professional management	40	+
7.09	Brain drain	40	+
7.10	Female participation in labor force*	72	–
	8th pillar: Financial market sophistication	**73**	+
8.01	Financial market sophistication	31	+
8.02	Financing through local equity market	61	+
8.03	Ease of access to loans	89	–
8.04	Venture capital availability	103	–
8.05	Restriction on capital flows	123	–
8.06	Strength of investor protection*	45	+
8.07	Soundness of banks	36	+
8.08	Regulation of securities exchanges	41	+
8.09	Legal rights index*	118	–
	9th pillar: Technological readiness	**55**	+
9.01	Availability of latest technologies	60	+
9.02	Firm-level technology absorption	55	+
9.03	Laws relating to ICT	52	+
9.04	FDI and technology transfer	47	+
9.05	Mobile telephone subscribers*	68	+
9.06	Internet users*	58	+
9.07	Personal computers*	47	+
9.08	Broadband Internet subscribers*	54	+
	10th pillar: Market size	**10**	+
10.01	Domestic market size*	9	+
10.02	Foreign market size*	22	+
	11th pillar: Business sophistication	**39**	+
11.01	Local supplier quantity	21	+
11.02	Local supplier quality	40	+
11.03	State of cluster development	41	+
11.04	Nature of competitive advantage	99	–
11.05	Value chain breadth	67	+
11.06	Control of international distribution	49	–
11.07	Production process sophistication	36	+
11.08	Extent of marketing	33	+
11.09	Willingness to delegate authority	39	+
	12th pillar: Innovation	**44**	+
12.01	Capacity for innovation	29	+
12.02	Quality of scientific research institutions	42	+
12.03	Company spending on R&D	35	+
12.04	University-industry research collaboration	46	+
12.05	Gov't procurement of advanced tech products	67	+
12.06	Availability of scientists and engineers	60	+
12.07	Utility patents*	55	+

* Hard data

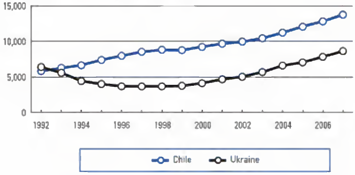
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Chile

Key indicators

Total population (millions), 2007	16.6
GDP (US$ billions), 2007	160.8
GDP (US$) per capita, 2007	9,697.7
GDP (PPP, US$) per capita, 2007	13,744.5
GDP (PPP, US$) as share of world total (%), 2007	0.32

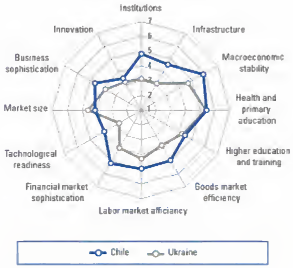
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

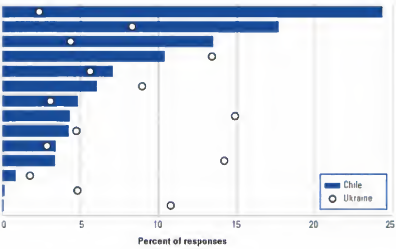
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**26**	**4.8**
GCI 2006-2007 (out of 122)	27	4.8
GCI 2005-2006 (out of 114)	27	4.7
Basic requirements	**33**	**5.2**
Institutions	29	4.8
Infrastructure	31	4.6
Macroeconomic stability	12	5.9
Health and primary education	70	5.4
Efficiency enhancers	**28**	**4.6**
Higher education and training	42	4.4
Goods market efficiency	28	4.9
Labor market efficiency	14	5.0
Financial market sophistication	26	5.2
Technological readiness	42	3.9
Market size	47	4.1
Innovation and sophistication factors	**36**	**4.1**
Business sophistication	32	4.7
Innovation	45	3.5

Stage of development: 2



The most problematic factors for doing business

Restrictive labour regulations	24.3%
Inefficient government bureaucracy	17.7%
Inadequately educated workforce	13.5%
Tax regulations	10.4%
Access to financing	7.0%
Tax rates	6.0%
Poor work ethic in national labour force	4.8%
Policy instability	4.3%
Inadequate supply of infrastructure	4.2%
Crime and theft	3.4%
Corruption	3.4%
Foreign currency regulations	0.8%
Inflation	0.1%
Government instability/coups	0.0%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Chile

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**26**	+
	Basic requirements	**33**	+
	Efficiency enhancers	**28**	+
	Innovation and sophistication factors	**36**	+
	1st pillar: Institutions	**29**	+
1.01	Property rights	40	+
1.02	Intellectual property protection	49	+
1.03	Diversion of public funds	37	+
1.04	Public trust of politicians	28	+
1.05	Judicial independence	54	+
1.06	Favoritism in decisions of government officials	31	+
1.07	Wastefulness of government spending	29	+
1.08	Burden of government regulation	24	+
1.09	Efficiency of legal framework	35	+
1.10	Transparency of government policymaking	19	+
1.11	Business costs of terrorism	28	+
1.12	Business costs of crime and violence	65	+
1.13	Organized crime	28	+
1.14	Reliability of police services	26	+
1.15	Ethical behavior of firms	18	+
1.16	Strength of auditing and reporting standards	30	+
1.17	Efficacy of corporate boards	15	+
1.18	Protection of minority shareholders' interests	28	+
	2nd pillar: Infrastructure	**31**	+
2.01	Quality of overall infrastructure	30	+
2.02	Quality of roads	22	+
2.03	Quality of railroad infrastructure	66	–
2.04	Quality of port infrastructure	34	+
2.05	Quality of air transport infrastructure	31	+
2.06	Available seat kilometers*	37	+
2.07	Quality of electricity supply	39	+
2.08	Telephone lines*	59	–
	3rd pillar: Macroeconomic stability	**12**	+
3.01	Government surplus/deficit*	11	+
3.02	National savings rate*	59	+
3.03	Inflation*	50	+
3.04	Interest rate spread*	22	+
3.05	Government debt*	5	+
	4th pillar: Health and primary education	**70**	+
4.01	Business impact of malaria	20	+
4.02	Malaria incidence*	58	–
4.03	Business impact of tuberculosis	10	+
4.04	Tuberculosis incidence*	32	+
4.05	Business impact of HIV/AIDS	43	+
4.06	HIV prevalence*	64	+
4.07	Infant mortality*	39	+
4.08	Life expectancy*	31	+
4.09	Quality of primary education	102	–
4.10	Primary enrollment*	79	+
4.11	Education expenditure*	73	–
	5th pillar: Higher education and training	**42**	+
5.01	Secondary enrollment*	53	+
5.02	Tertiary enrollment*	41	–
5.03	Quality of the educational system	78	–
5.04	Quality of math and science education	107	–
5.05	Quality of management schools	19	+
5.06	Internet access in schools	39	+
5.07	Local availability of research and training services	34	+
5.08	Extent of staff training	40	+
	6th pillar: Goods market efficiency	**28**	+
6.01	Intensity of local competition	14	+
6.02	Extent of market dominance	67	+
6.03	Effectiveness of anti-monopoly policy	24	+
6.04	Extent and effect of taxation	36	+
6.05	Total tax rate*	11	+
6.06	No. of procedures required to start a business*	52	+
6.07	Time required to start a business*	48	+
6.08	Agricultural policy costs	7	+
6.09	Prevalence of trade barriers	11	+
6.10	Trade-weighted tariff rate*	64	–
6.11	Prevalence of foreign ownership	12	+
6.12	Business impact of rules on FDI	16	+
6.13	Burden of customs procedures	10	+
6.14	Degree of customer orientation	46	+
6.15	Buyer sophistication	29	+
	7th pillar: Labor market efficiency	**14**	+
7.01	Cooperation in labor-employer relations	29	+
7.02	Flexibility of wage determination	4	+
7.03	Non-wage labor costs*	12	+
7.04	Rigidity of employment*	26	+
7.05	Hiring and firing practices	62	–
7.06	Firing costs*	81	–
7.07	Pay and productivity	16	+
7.08	Reliance on professional management	23	+
7.09	Brain drain	7	+
7.10	Female participation in labor force*	109	–
	8th pillar: Financial market sophistication	**26**	+
8.01	Financial market sophistication	27	+
8.02	Financing through local equity market	7	+
8.03	Ease of access to loans	33	+
8.04	Venture capital availability	34	+
8.05	Restriction on capital flows	40	+
8.06	Strength of investor protection*	19	+
8.07	Soundness of banks	21	+
8.08	Regulation of securities exchanges	7	+
8.09	Legal rights index*	69	–
	9th pillar: Technological readiness	**42**	+
9.01	Availability of latest technologies	34	+
9.02	Firm-level technology absorption	38	+
9.03	Laws relating to ICT	25	+
9.04	FDI and technology transfer	30	+
9.05	Mobile telephone subscribers*	51	+
9.06	Internet users*	39	+
9.07	Personal computers*	51	+
9.08	Broadband Internet subscribers*	38	+
	10th pillar: Market size	**47**	–
10.01	Domestic market size*	46	–
10.02	Foreign market size*	43	–
	11th pillar: Business sophistication	**32**	+
11.01	Local supplier quantity	24	+
11.02	Local supplier quality	27	+
11.03	State of cluster development	53	+
11.04	Nature of competitive advantage	52	+
11.05	Value chain breadth	48	+
11.06	Control of international distribution	30	+
11.07	Production process sophistication	31	+
11.08	Extent of marketing	22	+
11.09	Willingness to delegate authority	36	+
	12th pillar: Innovation	**45**	+
12.01	Capacity for innovation	50	–
12.02	Quality of scientific research institutions	51	+
12.03	Company spending on R&D	60	+
12.04	University-industry research collaboration	43	+
12.05	Gov't procurement of advanced tech products	40	+
12.06	Availability of scientists and engineers	31	+
12.07	Utility patents*	49	+

* Hard data

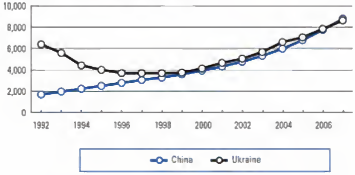
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

China

Key indicators

Total population (millions), 2007	1,320.7
GDP (US$ billions), 2007	3,248.5
GDP (US$) per capita, 2007	2,459.8
GDP (PPP, US$) per capita, 2007	8,788.2
GDP (PPP, US$) as share of world total (%), 2007	15.83

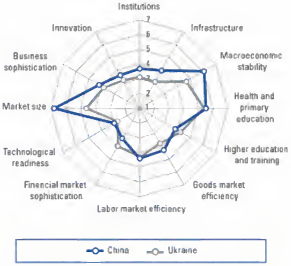
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

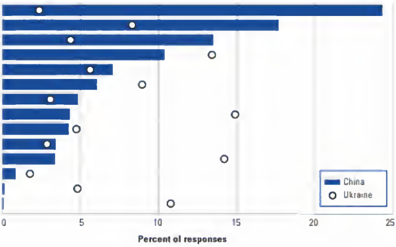
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**34**	**4.6**
GCI 2006-2007 (out of 122)	34	4.6
GCI 2005-2006 (out of 114)	34	4.4
Basic requirements	**44**	**4.8**
Institutions	77	3.7
Infrastructure	52	4.0
Macroeconomic stability	7	6.0
Health and primary education	61	5.5
Efficiency enhancers	**45**	**4.3**
Higher education and training	78	3.8
Goods market efficiency	58	4.3
Labor market efficiency	55	4.4
Financial market sophistication	118	3.3
Technological readiness	73	3.0
Market size	2	6.8
Innovation and sophistication factors	**50**	**3.9**
Business sophistication	57	4.2
Innovation	38	3.6

Stage of development: Transition from 1 to 2



The most problematic factors for doing business

Access to financing	14.8%
Inefficient government bureaucracy	14.6%
Corruption	11.6%
Policy instability	11.6%
Inadequate supply of infrastructure	9.1%
Tax regulations	7.2%
Inadequately educated workforce	6.6%
Poor work ethic in national labour force	5.6%
Tax rates	5.3%
Foreign currency regulations	3.7%
Restrictive labour regulations	3.5%
Inflation	2.5%
Government instability/coups	2.3%
Crime and theft	1.6%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

China

The Global Competitiveness Index in detail

+ better than Ukraine **–** worse than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**34**	+
	Basic requirements	**44**	+
	Efficiency enhancers	**45**	+
	Innovation and sophistication factors	**50**	+
	1st pillar: Institutions	**77**	+
1.01	Property rights	76	+
1.02	Intellectual property protection	71	+
1.03	Diversion of public funds	83	+
1.04	Public trust of politicians	45	+
1.05	Judicial independence	82	+
1.06	Favoritism in decisions of government officials	71	+
1.07	Wastefulness of government spending	48	+
1.08	Burden of government regulation	35	+
1.09	Efficiency of legal framework	71	+
1.10	Transparency of government policymaking	88	+
1.11	Business costs of terrorism	109	–
1.12	Business costs of crime and violence	73	–
1.13	Organized crime	99	–
1.14	Reliability of police services	59	+
1.15	Ethical behavior of firms	101	+
1.16	Strength of auditing and reporting standards	102	+
1.17	Efficacy of corporate boards	115	–
1.18	Protection of minority shareholders' interests	114	+
	2nd pillar: Infrastructure	**52**	+
2.01	Quality of overall infrastructure	65	+
2.02	Quality of roads	53	+
2.03	Quality of railroad infrastructure	33	–
2.04	Quality of port infrastructure	66	+
2.05	Quality of air transport infrastructure	86	+
2.06	Available seat kilometers*	2	+
2.07	Quality of electricity supply	78	+
2.08	Telephone lines*	48	+
	3rd pillar: Macroeconomic stability	**7**	+
3.01	Government surplus/deficit*	69	+
3.02	National savings rate*	7	+
3.03	Inflation*	7	+
3.04	Interest rate spread*	36	+
3.05	Government debt*	24	–
	4th pillar: Health and primary education	**61**	+
4.01	Business impact of malaria	91	–
4.02	Malaria incidence*	75	–
4.03	Business impact of tuberculosis	85	+
4.04	Tuberculosis incidence*	87	–
4.05	Business impact of HIV/AIDS	56	+
4.06	HIV prevalence*	25	+
4.07	Infant mortality*	81	–
4.08	Life expectancy*	56	+
4.09	Quality of primary education	48	+
4.10	Primary enrollment*	50	+
4.11	Education expenditure*	111	–
	5th pillar: Higher education and training	**78**	–
5.01	Secondary enrollment*	91	–
5.02	Tertiary enrollment*	80	–
5.03	Quality of the educational system	73	–
5.04	Quality of math and science education	57	–
5.05	Quality of management schools	90	–
5.06	Internet access in schools	46	+
5.07	Local availability of research and training services	39	+
5.08	Extent of staff training	61	+
	6th pillar: Goods market efficiency	**58**	+
6.01	Intensity of local competition	39	+
6.02	Extent of market dominance	66	+
6.03	Effectiveness of anti-monopoly policy	73	+
6.04	Extent and effect of taxation	47	+
6.05	Total tax rate*	114	–
6.06	No. of procedures required to start a business*	101	–
6.07	Time required to start a business*	70	–
6.08	Agricultural policy costs	8	+
6.09	Prevalence of trade barriers	78	+
6.10	Trade-weighted tariff rate*	49	–
6.11	Prevalence of foreign ownership	103	+
6.12	Business impact of rules on FDI	60	+
6.13	Burden of customs procedures	48	+
6.14	Degree of customer orientation	79	–
6.15	Buyer sophistication	39	+
	7th pillar: Labor market efficiency	**55**	+
7.01	Cooperation in labor-employer relations	89	–
7.02	Flexibility of wage determination	51	–
7.03	Non-wage labor costs*	122	–
7.04	Rigidity of employment*	26	+
7.05	Hiring and firing practices	41	–
7.06	Firing costs*	107	–
7.07	Pay and productivity	15	+
7.08	Reliance on professional management	63	+
7.09	Brain drain	38	+
7.10	Female participation in labor force*	27	–
	8th pillar: Financial market sophistication	**118**	–
8.01	Financial market sophistication	91	–
8.02	Financing through local equity market	82	+
8.03	Ease of access to loans	100	–
8.04	Venture capital availability	71	–
8.05	Restriction on capital flows	114	–
8.06	Strength of investor protection*	65	+
8.07	Soundness of banks	128	–
8.08	Regulation of securities exchanges	111	+
8.09	Legal rights index*	118	–
	9th pillar: Technological readiness	**73**	+
9.01	Availability of latest technologies	79	+
9.02	Firm-level technology absorption	50	+
9.03	Laws relating to ICT	57	+
9.04	FDI and technology transfer	90	+
9.05	Mobile telephone subscribers*	86	–
9.06	Internet users*	80	–
9.07	Personal computers*	86	+
9.08	Broadband Internet subscribers*	46	+
	10th pillar: Market size	**2**	+
10.01	Domestic market size*	2	+
10.02	Foreign market size*	1	+
	11th pillar: Business sophistication	**57**	+
11.01	Local supplier quantity	35	+
11.02	Local supplier quality	73	+
11.03	State of cluster development	29	+
11.04	Nature of competitive advantage	80	–
11.05	Value chain breadth	61	+
11.06	Control of international distribution	63	–
11.07	Production process sophistication	81	–
11.08	Extent of marketing	80	+
11.09	Willingness to delegate authority	72	+
	12th pillar: Innovation	**38**	+
12.01	Capacity for innovation	34	+
12.02	Quality of scientific research institutions	56	+
12.03	Company spending on R&D	32	+
12.04	University-industry research collaboration	25	+
12.05	Gov't procurement of advanced tech products	23	+
12.06	Availability of scientists and engineers	78	–
12.07	Utility patents*	59	–

* Hard data

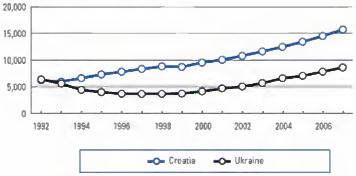
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167.

Croatia

Key indicators

Total population (millions), 2007	4.4
GDP (US$ billions), 2007	50.1
GDP (US$) per capita, 2007	11,271.4
GDP (PPP, US$) per capita, 2007	15,733.1
GDP (PPP, US$) as share of world total (%), 2007	0.10

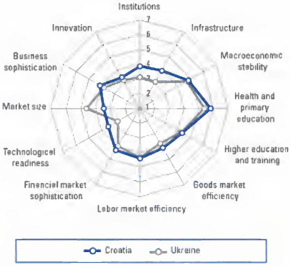
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

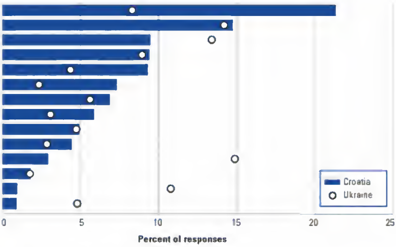
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**57**	**4.2**
GCI 2006-2007 (out of 122)	56	4.2
GCI 2005-2006 (out of 114)	73	3.8
Basic requirements	**53**	**4.6**
Institutions	65	3.9
Infrastructure	53	3.9
Macroeconomic stability	73	4.8
Health and primary education	44	5.8
Efficiency enhancers	**61**	**4.0**
Higher education and training	46	4.3
Goods market efficiency	71	4.1
Labor market efficiency	56	4.4
Financial market sophistication	68	4.3
Technological readiness	49	3.5
Market size	64	3.4
Innovation and sophistication factors	**53**	**3.8**
Business sophistication	64	4.1
Innovation	50	3.4

Stage of development: Transition from 2 to 3



The most problematic factors for doing business

Inefficient government bureaucracy	21.3%
Corruption	14.7%
Tax regulations	9.4%
Tax rates	9.4%
Inadequately educated workforce	9.3%
Restrictive labour regulations	7.3%
Access to financing	6.9%
Poor work ethic in national labour force	5.9%
Inadequate supply of infrastructure	4.9%
Crime and theft	4.4%
Policy instability	2.9%
Foreign currency regulations	1.8%
Government instability/coups	0.9%
Inflation	0.9%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Croatia

The Global Competitiveness Index in detail

+ better than Ukraine **− worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**57**	+
	Basic requirements	**53**	+
	Efficiency enhancers	**61**	+
	Innovation and sophistication factors	**53**	+
	1st pillar: Institutions	**65**	+
1.01	Property rights	78	+
1.02	Intellectual property protection	58	+
1.03	Diversion of public funds	51	+
1.04	Public trust of politicians	69	+
1.05	Judicial independence	86	+
1.06	Favoritism in decisions of government officials	63	+
1.07	Wastefulness of government spending	75	+
1.08	Burden of government regulation	91	+
1.09	Efficiency of legal framework	80	+
1.10	Transparency of government policymaking	80	+
1.11	Business costs of terrorism	19	+
1.12	Business costs of crime and violence	62	+
1.13	Organized crime	79	+
1.14	Reliability of police services	63	+
1.15	Ethical behavior of firms	80	+
1.16	Strength of auditing and reporting standards	61	+
1.17	Efficacy of corporate boards	85	+
1.18	Protection of minority shareholders' interests	87	+
	2nd pillar: Infrastructure	**53**	+
2.01	Quality of overall infrastructure	53	+
2.02	Quality of roads	36	+
2.03	Quality of railroad infrastructure	51	−
2.04	Quality of port infrastructure	89	−
2.05	Quality of air transport infrastructure	75	+
2.06	Available seat kilometers*	89	−
2.07	Quality of electricity supply	43	+
2.08	Telephone lines*	31	+
	3rd pillar: Macroeconomic stability	**73**	+
3.01	Government surplus/deficit*	98	−
3.02	National savings rate*	46	+
3.03	Inflation*	43	+
3.04	Interest rate spread*	95	−
3.05	Government debt*	58	−
	4th pillar: Health and primary education	**44**	+
4.01	Business impact of malaria	30	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	26	+
4.04	Tuberculosis incidence*	56	+
4.05	Business impact of HIV/AIDS	19	+
4.06	HIV prevalence*	1	+
4.07	Infant mortality*	32	+
4.08	Life expectancy*	40	+
4.09	Quality of primary education	34	+
4.10	Primary enrollment*	91	+
4.11	Education expenditure*	62	−
	5th pillar: Higher education and training	**46**	+
5.01	Secondary enrollment*	57	−
5.02	Tertiary enrollment*	51	−
5.03	Quality of the educational system	61	−
5.04	Quality of math and science education	28	+
5.05	Quality of management schools	71	+
5.06	Internet access in schools	42	+
5.07	Local availability of research and training services	38	+
5.08	Extent of staff training	60	+
	6th pillar: Goods market efficiency	**71**	+
6.01	Intensity of local competition	63	+
6.02	Extent of market dominance	77	+
6.03	Effectiveness of anti-monopoly policy	69	+
6.04	Extent and effect of taxation	86	+
6.05	Total tax rate*	34	+
6.06	No. of procedures required to start a business*	65	=
6.07	Time required to start a business*	91	−
6.08	Agricultural policy costs	119	+
6.09	Prevalence of trade barriers	50	+
6.10	Trade-weighted tariff rate*	52	−
6.11	Prevalence of foreign ownership	82	+
6.12	Business impact of rules on FDI	102	+
6.13	Burden of customs procedures	51	+
6.14	Degree of customer orientation	76	−
6.15	Buyer sophistication	69	+
	7th pillar: Labor market efficiency	**56**	+
7.01	Cooperation in labor-employer relations	113	−
7.02	Flexibility of wage determination	69	−
7.03	Non-wage labor costs*	70	+
7.04	Rigidity of employment*	91	+
7.05	Hiring and firing practices	74	−
7.06	Firing costs*	67	−
7.07	Pay and productivity	37	−
7.08	Reliance on professional management	76	+
7.09	Brain drain	67	+
7.10	Female participation in labor force*	48	−
	8th pillar: Financial market sophistication	**68**	+
8.01	Financial market sophistication	67	+
8.02	Financing through local equity market	67	+
8.03	Ease of access to loans	59	+
8.04	Venture capital availability	73	−
8.05	Restriction on capital flows	75	+
8.06	Strength of investor protection*	113	−
8.07	Soundness of banks	59	+
8.08	Regulation of securities exchanges	70	+
8.09	Legal rights index*	47	−
	9th pillar: Technological readiness	**49**	+
9.01	Availability of latest technologies	76	+
9.02	Firm-level technology absorption	93	−
9.03	Laws relating to ICT	46	+
9.04	FDI and technology transfer	114	−
9.05	Mobile telephone subscribers*	40	+
9.06	Internet users*	35	+
9.07	Personal computers*	42	+
9.08	Broadband Internet subscribers*	51	+
	10th pillar: Market size	**64**	−
10.01	Domestic market size*	66	−
10.02	Foreign market size*	71	−
	11th pillar: Business sophistication	**64**	+
11.01	Local supplier quantity	82	−
11.02	Local supplier quality	72	+
11.03	State of cluster development	65	+
11.04	Nature of competitive advantage	39	+
11.05	Value chain breadth	64	+
11.06	Control of international distribution	48	−
11.07	Production process sophistication	61	+
11.08	Extent of marketing	55	+
11.09	Willingness to delegate authority	50	+
	12th pillar: Innovation	**50**	+
12.01	Capacity for innovation	48	−
12.02	Quality of scientific research institutions	54	+
12.03	Company spending on R&D	47	+
12.04	University-industry research collaboration	38	+
12.05	Gov't procurement of advanced tech products	80	−
12.06	Availability of scientists and engineers	46	+
12.07	Utility patents*	35	+

* Hard data

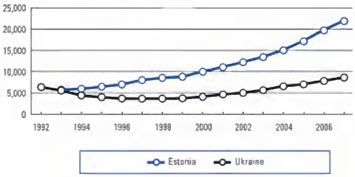
Note For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Estonia

Key indicators

Indicator	Value
Total population (millions), 2007	1.3
GDP (US$ billions), 2007	20.6
GDP (US$) per capita, 2007	15,309.8
GDP (PPP, US$) per capita, 2007	21,860.2
GDP (PPP, US$) as share of world total (%), 2007	0.04

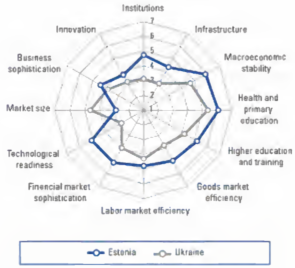
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

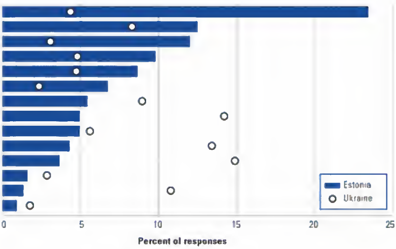
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**27**	**4.7**
GCI 2006-2007 (out of 122)	26	4.8
GCI 2005-2006 (out of 114)	26	4.7
Basic requirements	**29**	**5.3**
Institutions	34	4.7
Infrastructure	36	4.4
Macroeconomic stability	14	5.8
Health and primary education	30	6.1
Efficiency enhancers	**27**	**4.7**
Higher education and training	23	5.2
Goods market efficiency	27	4.9
Labor market efficiency	26	4.8
Financial market sophistication	31	5.1
Technological readiness	19	5.1
Market size	91	2.9
Innovation and sophistication factors	**35**	**4.1**
Business sophistication	44	4.4
Innovation	31	3.8

Stage of development: Transition from 2 to 3



The most problematic factors for doing business

Factor	Percent
Inadequately educated workforce	23.4%
Inefficient government bureaucracy	12.5%
Poor work ethic in national labour force	12.0%
Inflation	9.8%
Inadequate supply of infrastructure	8.6%
Restrictive labour regulations	6.7%
Tax rates	5.4%
Corruption	4.9%
Access to financing	4.9%
Tax regulations	4.3%
Policy instability	3.6%
Crime and theft	1.6%
Government instability/coups	1.3%
Foreign currency regulations	0.9%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Estonia

The Global Competitiveness Index in detail

+ better than Ukraine **− worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**27**	+
	Basic requirements	**29**	+
	Efficiency enhancers	**27**	+
	Innovation and sophistication factors	**35**	+
	1st pillar: Institutions	**34**	+
1.01	Property rights	26	+
1.02	Intellectual property protection	34	+
1.03	Diversion of public funds	40	+
1.04	Public trust of politicians	43	+
1.05	Judicial independence	27	+
1.06	Favoritism in decisions of government officials	44	+
1.07	Wastefulness of government spending	39	+
1.08	Burden of government regulation	10	+
1.09	Efficiency of legal framework	29	+
1.10	Transparency of government policymaking	28	+
1.11	Business costs of terrorism	27	+
1.12	Business costs of crime and violence	36	+
1.13	Organized crime	31	+
1.14	Reliability of police services	44	+
1.15	Ethical behavior of firms	45	+
1.16	Strength of auditing and reporting standards	31	+
1.17	Efficacy of corporate boards	32	+
1.18	Protection of minority shareholders' interests	41	+
	2nd pillar: Infrastructure	**36**	+
2.01	Quality of overall infrastructure	37	+
2.02	Quality of roads	55	+
2.03	Quality of railroad infrastructure	37	−
2.04	Quality of port infrastructure	26	+
2.05	Quality of air transport infrastructure	53	+
2.06	Available seat kilometers*	109	−
2.07	Quality of electricity supply	38	+
2.08	Telephone lines*	34	+
	3rd pillar: Macroeconomic stability	**14**	+
3.01	Government surplus/deficit*	22	+
3.02	National savings rate*	58	+
3.03	Inflation*	65	+
3.04	Interest rate spread*	12	+
3.05	Government debt*	4	+
	4th pillar: Health and primary education	**30**	+
4.01	Business impact of malaria	17	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	58	+
4.04	Tuberculosis incidence*	60	+
4.05	Business impact of HIV/AIDS	73	+
4.06	HIV prevalence*	103	+
4.07	Infant mortality*	32	+
4.08	Life expectancy*	56	+
4.09	Quality of primary education	19	+
4.10	Primary enrollment*	46	+
4.11	Education expenditure*	36	+
	5th pillar: Higher education and training	**23**	+
5.01	Secondary enrollment*	31	+
5.02	Tertiary enrollment*	18	−
5.03	Quality of the educational system	35	+
5.04	Quality of math and science education	22	+
5.05	Quality of management schools	31	+
5.06	Internet access in schools	6	+
5.07	Local availability of research and training services	27	+
5.08	Extent of staff training	30	+
	6th pillar: Goods market efficiency	**27**	+
6.01	Intensity of local competition	24	+
6.02	Extent of market dominance	40	+
6.03	Effectiveness of anti-monopoly policy	32	+
6.04	Extent and effect of taxation	12	+
6.05	Total tax rate*	77	+
6.06	No. of procedures required to start a business*	16	+
6.07	Time required to start a business*	70	−
6.08	Agricultural policy costs	13	+
6.09	Prevalence of trade barriers	17	+
6.10	Trade-weighted tariff rate*	13	+
6.11	Prevalence of foreign ownership	33	+
6.12	Business impact of rules on FDI	7	+
6.13	Burden of customs procedures	17	+
6.14	Degree of customer orientation	26	+
6.15	Buyer sophistication	47	+
	7th pillar: Labor market efficiency	**26**	+
7.01	Cooperation in labor-employer relations	27	+
7.02	Flexibility of wage determination	2	+
7.03	Non-wage labor costs*	115	+
7.04	Rigidity of employment*	110	−
7.05	Hiring and firing practices	55	−
7.06	Firing costs*	60	−
7.07	Pay and productivity	8	+
7.08	Reliance on professional management	29	+
7.09	Brain drain	44	+
7.10	Female participation in labor force*	25	+
	8th pillar: Financial market sophistication	**31**	+
8.01	Financial market sophistication	29	+
8.02	Financing through local equity market	25	+
8.03	Ease of access to loans	18	+
8.04	Venture capital availability	24	+
8.05	Restriction on capital flows	17	+
8.06	Strength of investor protection*	25	+
8.07	Soundness of banks	32	+
8.08	Regulation of securities exchanges	26	+
8.09	Legal rights index*	69	−
	9th pillar: Technological readiness	**19**	+
9.01	Availability of latest technologies	25	+
9.02	Firm-level technology absorption	26	+
9.03	Laws relating to ICT	2	+
9.04	FDI and technology transfer	10	+
9.05	Mobile telephone subscribers*	9	+
9.06	Internet users*	16	+
9.07	Personal computers*	21	+
9.08	Broadband Internet subscribers*	22	+
	10th pillar: Market size	**91**	−
10.01	Domestic market size*	96	−
10.02	Foreign market size*	78	−
	11th pillar: Business sophistication	**44**	+
11.01	Local supplier quantity	53	+
11.02	Local supplier quality	34	+
11.03	State of cluster development	72	+
11.04	Nature of competitive advantage	65	+
11.05	Value chain breadth	57	+
11.06	Control of international distribution	65	−
11.07	Production process sophistication	38	+
11.08	Extent of marketing	35	+
11.09	Willingness to delegate authority	31	+
	12th pillar: Innovation	**31**	+
12.01	Capacity for innovation	39	+
12.02	Quality of scientific research institutions	26	+
12.03	Company spending on R&D	37	+
12.04	University-industry research collaboration	32	+
12.05	Gov't procurement of advanced tech products	24	+
12.06	Availability of scientists and engineers	68	+
12.07	Utility patents*	43	+

* Hard data

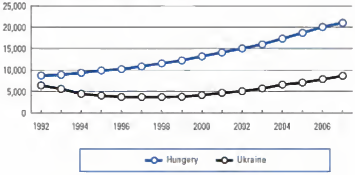
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Hungary

Key indicators

Total population (millions), 2007	10.1
GDP (US$ billions), 2007	136.4
GDP (US$) per capita, 2007	13,560.4
GDP (PPP, US$) per capita, 2007	21,040.4
GDP (PPP, US$) as share of world total (%), 2007	0.29

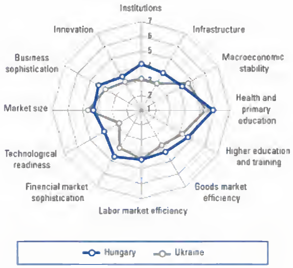
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

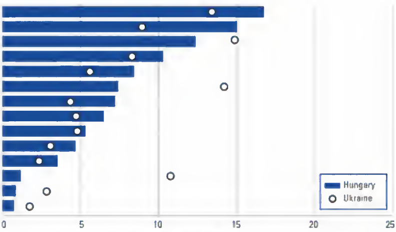
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**47**	**4.4**
GCI 2006-2007 (out of 122)	38	4.5
GCI 2005-2006 (out of 114)	41	4.3
Basic requirements	**55**	**4.5**
Institutions	54	4.1
Infrastructure	54	3.9
Macroeconomic stability	107	4.2
Health and primary education	41	5.9
Efficiency enhancers	**40**	**4.3**
Higher education and training	33	4.6
Goods market efficiency	59	4.3
Labor market efficiency	58	4.4
Financial market sophistication	51	4.6
Technological readiness	41	3.9
Market size	41	4.3
Innovation and sophistication factors	**43**	**4.0**
Business sophistication	46	4.3
Innovation	37	3.6

Stage of development: Transition from 2 to 3



The most problematic factors for doing business

Tax regulations	16.7%
Tax rates	15.0%
Policy instability	12.3%
Inefficient government bureaucracy	10.3%
Access to financing	8.4%
Corruption	7.4%
Inadequately educated workforce	7.2%
Inadequate supply of infrastructure	6.5%
Inflation	5.3%
Poor work ethic in national labour force	4.6%
Restrictive labour regulations	3.5%
Government instability/coups	1.2%
Crime and theft	0.8%
Foreign currency regulations	0.7%



Source: World Economic Forum, Executive Opinion Survey 2007

Percent of responses

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Hungary

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**47**	+
	Basic requirements	**55**	+
	Efficiency enhancers	**40**	+
	Innovation and sophistication factors	**43**	+
	1st pillar: Institutions	**54**	+
1.01	Property rights	37	+
1.02	Intellectual property protection	37	+
1.03	Diversion of public funds	56	+
1.04	Public trust of politicians	75	+
1.05	Judicial independence	49	+
1.06	Favoritism in decisions of government officials	98	–
1.07	Wastefulness of government spending	117	–
1.08	Burden of government regulation	110	–
1.09	Efficiency of legal framework	57	+
1.10	Transparency of government policymaking	94	+
1.11	Business costs of terrorism	11	+
1.12	Business costs of crime and violence	31	+
1.13	Organized crime	48	+
1.14	Reliability of police services	41	+
1.15	Ethical behavior of firms	85	+
1.16	Strength of auditing and reporting standards	50	+
1.17	Efficacy of corporate boards	59	+
1.18	Protection of minority shareholders' interests	48	+
	2nd pillar: Infrastructure	**54**	+
2.01	Quality of overall infrastructure	52	+
2.02	Quality of roads	64	+
2.03	Quality of railroad infrastructure	42	–
2.04	Quality of port infrastructure	71	+
2.05	Quality of air transport infrastructure	72	+
2.06	Available seat kilometers*	61	–
2.07	Quality of electricity supply	49	+
2.08	Telephone lines*	35	+
	3rd pillar: Macroeconomic stability	**107**	–
3.01	Government surplus/deficit*	126	–
3.02	National savings rate*	92	–
3.03	Inflation*	59	+
3.04	Interest rate spread*	10	+
3.05	Government debt*	100	–
	4th pillar: Health and primary education	**41**	+
4.01	Business impact of malaria	5	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	46	+
4.04	Tuberculosis incidence*	38	+
4.05	Business impact of HIV/AIDS	15	+
4.06	HIV prevalence*	25	+
4.07	Infant mortality*	35	+
4.08	Life expectancy*	51	+
4.09	Quality of primary education	37	+
4.10	Primary enrollment*	84	+
4.11	Education expenditure*	19	+
	5th pillar: Higher education and training	**33**	+
5.01	Secondary enrollment*	37	+
5.02	Tertiary enrollment*	25	–
5.03	Quality of the educational system	65	–
5.04	Quality of math and science education	23	+
5.05	Quality of management schools	57	+
5.06	Internet access in schools	27	+
5.07	Local availability of research and training services	61	+
5.08	Extent of staff training	74	+
	6th pillar: Goods market efficiency	**59**	+
6.01	Intensity of local competition	32	+
6.02	Extent of market dominance	64	+
6.03	Effectiveness of anti-monopoly policy	39	+
6.04	Extent and effect of taxation	117	+
6.05	Total tax rate*	99	+
6.06	No. of procedures required to start a business*	16	+
6.07	Time required to start a business*	78	–
6.08	Agricultural policy costs	111	+
6.09	Prevalence of trade barriers	19	+
6.10	Trade-weighted tariff rate*	13	+
6.11	Prevalence of foreign ownership	13	+
6.12	Business impact of rules on FDI	31	+
6.13	Burden of customs procedures	44	+
6.14	Degree of customer orientation	86	–
6.15	Buyer sophistication	91	–
	7th pillar: Labor market efficiency	**58**	+
7.01	Cooperation in labor-employer relations	43	+
7.02	Flexibility of wage determination	61	–
7.03	Non-wage labor costs*	117	+
7.04	Rigidity of employment*	50	+
7.05	Hiring and firing practices	71	–
7.06	Firing costs*	58	–
7.07	Pay and productivity	56	–
7.08	Reliance on professional management	58	+
7.09	Brain drain	55	+
7.10	Female participation in labor force*	50	–
	8th pillar: Financial market sophistication	**51**	+
8.01	Financial market sophistication	47	+
8.02	Financing through local equity market	76	+
8.03	Ease of access to loans	51	+
8.04	Venture capital availability	50	+
8.05	Restriction on capital flows	29	+
8.06	Strength of investor protection*	87	+
8.07	Soundness of banks	73	+
8.08	Regulation of securities exchanges	46	+
8.09	Legal rights index*	27	–
	9th pillar: Technological readiness	**41**	+
9.01	Availability of latest technologies	56	+
9.02	Firm-level technology absorption	48	+
9.03	Laws relating to ICT	48	+
9.04	FDI and technology transfer	12	+
9.05	Mobile telephone subscribers*	25	+
9.06	Internet users*	38	+
9.07	Personal computers*	49	+
9.08	Broadband Internet subscribers*	36	+
	10th pillar: Market size	**41**	–
10.01	Domestic market size*	43	–
10.02	Foreign market size*	35	–
	11th pillar: Business sophistication	**46**	+
11.01	Local supplier quantity	69	–
11.02	Local supplier quality	59	+
11.03	State of cluster development	6	+
11.04	Nature of competitive advantage	54	+
11.05	Value chain breadth	32	+
11.06	Control of international distribution	110	–
11.07	Production process sophistication	45	+
11.08	Extent of marketing	63	+
11.09	Willingness to delegate authority	85	+
	12th pillar: Innovation	**37**	+
12.01	Capacity for innovation	38	+
12.02	Quality of scientific research institutions	24	+
12.03	Company spending on R&D	68	–
12.04	University-industry research collaboration	34	+
12.05	Gov't procurement of advanced tech products	86	–
12.06	Availability of scientists and engineers	40	+
12.07	Utility patents*	32	+

* Hard data

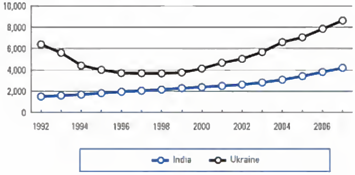
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

India

Key indicators

Total population (millions), 2007	1,130.0
GDP (US$ billions), 2007	1,089.9
GDP (US$) per capita, 2007	964.6
GDP (PPP, US$) per capita, 2007	4,182.9
GDP (PPP, US$) as share of world total (%), 2007	6.43

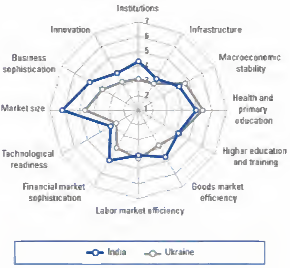
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

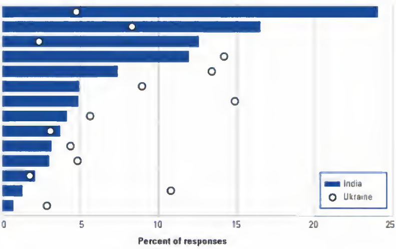
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**48**	**4.3**
GCI 2006-2007 (out of 122)	42	4.5
GCI 2005-2006 (out of 114)	46	4.2
Basic requirements	**74**	**4.2**
Institutions	48	4.3
Infrastructure	67	3.4
Macroeconomic stability	108	4.2
Health and primary education	101	4.9
Efficiency enhancers	**31**	**4.5**
Higher education and training	55	4.1
Goods market efficiency	36	4.7
Labor market efficiency	96	4.1
Financial market sophistication	37	4.9
Technological readiness	62	3.2
Market size	3	6.2
Innovation and sophistication factors	**26**	**4.4**
Business sophistication	26	4.8
Innovation	28	3.9

Stage of development: 1



The most problematic factors for doing business

Inadequate supply of infrastructure	24.0%
Inefficient government bureaucracy	16.5%
Restrictive labour regulations	12.5%
Corruption	11.9%
Tax regulations	7.4%
Tax rates	4.9%
Policy instability	4.8%
Access to financing	4.1%
Poor work ethic in national labour force	3.7%
Inadequately educated workforce	3.1%
Inflation	3.0%
Foreign currency regulations	2.1%
Government instability/coups	1.3%
Crime and theft	0.7%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

India

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**48**	+
	Basic requirements	**74**	+
	Efficiency enhancers	**31**	+
	Innovation and sophistication factors	**26**	+
	1st pillar: Institutions	**48**	+
1.01	Property rights	44	+
1.02	Intellectual property protection	48	+
1.03	Diversion of public funds	64	+
1.04	Public trust of politicians	83	+
1.05	Judicial independence	26	+
1.06	Favoritism in decisions of government officials	54	+
1.07	Wastefulness of government spending	47	+
1.08	Burden of government regulation	79	+
1.09	Efficiency of legal framework	34	+
1.10	Transparency of government policymaking	45	+
1.11	Business costs of terrorism	93	–
1.12	Business costs of crime and violence	45	+
1.13	Organized crime	68	+
1.14	Reliability of police services	60	+
1.15	Ethical behavior of firms	60	+
1.16	Strength of auditing and reporting standards	27	+
1.17	Efficacy of corporate boards	33	+
1.18	Protection of minority shareholders' interests	27	+
	2nd pillar: Infrastructure	**67**	+
2.01	Quality of overall infrastructure	79	–
2.02	Quality of roads	82	+
2.03	Quality of railroad infrastructure	23	+
2.04	Quality of port infrastructure	80	+
2.05	Quality of air transport infrastructure	61	+
2.06	Available seat kilometers*	10	+
2.07	Quality of electricity supply	106	–
2.08	Telephone lines*	102	–
	3rd pillar: Macroeconomic stability	**108**	–
3.01	Government surplus/deficit*	125	–
3.02	National savings rate*	38	+
3.03	Inflation*	81	+
3.04	Interest rate spread*	47	+
3.05	Government debt*	109	–
	4th pillar: Health and primary education	**101**	–
4.01	Business impact of malaria	102	–
4.02	Malaria incidence*	101	–
4.03	Business impact of tuberculosis	91	+
4.04	Tuberculosis incidence*	98	–
4.05	Business impact of HIV/AIDS	100	–
4.06	HIV prevalence*	94	+
4.07	Infant mortality*	106	–
4.08	Life expectancy*	104	–
4.09	Quality of primary education	88	–
4.10	Primary enrollment*	85	+
4.11	Education expenditure*	69	–
	5th pillar: Higher education and training	**55**	–
5.01	Secondary enrollment*	103	–
5.02	Tertiary enrollment*	98	–
5.03	Quality of the educational system	31	+
5.04	Quality of math and science education	11	+
5.05	Quality of management schools	8	+
5.06	Internet access in schools	56	+
5.07	Local availability of research and training services	31	+
5.08	Extent of staff training	33	+
	6th pillar: Goods market efficiency	**36**	+
6.01	Intensity of local competition	10	+
6.02	Extent of market dominance	19	+
6.03	Effectiveness of anti-monopoly policy	30	+
6.04	Extent and effect of taxation	29	+
6.05	Total tax rate*	116	–
6.06	No. of procedures required to start a business*	85	–
6.07	Time required to start a business*	70	–
6.08	Agricultural policy costs	68	+
6.09	Prevalence of trade barriers	46	+
6.10	Trade-weighted tariff rate*	118	–
6.11	Prevalence of foreign ownership	63	+
6.12	Business impact of rules on FDI	49	+
6.13	Burden of customs procedures	73	+
6.14	Degree of customer orientation	33	+
6.15	Buyer sophistication	31	+
	7th pillar: Labor market efficiency	**96**	–
7.01	Cooperation in labor-employer relations	56	+
7.02	Flexibility of wage determination	57	–
7.03	Non-wage labor costs*	66	+
7.04	Rigidity of employment*	70	+
7.05	Hiring and firing practices	102	–
7.06	Firing costs*	84	–
7.07	Pay and productivity	46	–
7.08	Reliance on professional management	24	+
7.09	Brain drain	45	+
7.10	Female participation in labor force*	116	–
	8th pillar: Financial market sophistication	**37**	+
8.01	Financial market sophistication	33	+
8.02	Financing through local equity market	13	+
8.03	Ease of access to loans	38	+
8.04	Venture capital availability	29	+
8.05	Restriction on capital flows	84	+
8.06	Strength of investor protection*	25	+
8.07	Soundness of banks	46	+
8.08	Regulation of securities exchanges	30	+
8.09	Legal rights index*	47	–
	9th pillar: Technological readiness	**62**	+
9.01	Availability of latest technologies	31	+
9.02	Firm-level technology absorption	22	+
9.03	Laws relating to ICT	36	+
9.04	FDI and technology transfer	28	+
9.05	Mobile telephone subscribers*	114	–
9.06	Internet users*	95	–
9.07	Personal computers*	105	–
9.08	Broadband Internet subscribers*	88	–
	10th pillar: Market size	**3**	+
10.01	Domestic market size*	3	+
10.02	Foreign market size*	4	+
	11th pillar: Business sophistication	**26**	+
11.01	Local supplier quantity	6	+
11.02	Local supplier quality	33	+
11.03	State of cluster development	24	+
11.04	Nature of competitive advantage	75	+
11.05	Value chain breadth	27	+
11.06	Control of international distribution	31	+
11.07	Production process sophistication	41	+
11.08	Extent of marketing	30	+
11.09	Willingness to delegate authority	32	+
	12th pillar: Innovation	**28**	+
12.01	Capacity for innovation	31	+
12.02	Quality of scientific research institutions	22	+
12.03	Company spending on R&D	28	+
12.04	University-industry research collaboration	44	+
12.05	Gov't procurement of advanced tech products	71	+
12.06	Availability of scientists and engineers	4	+
12.07	Utility patents*	62	–

* Hard data

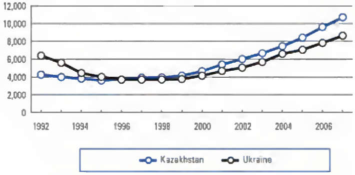
Note For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Kazakhstan

Key indicators

Total population (millions), 2007	15.1
GDP (US$ billions), 2007	95.5
GDP (US$) per capita, 2007	6,313.9
GDP (PPP, US$) per capita, 2007	10,658.4
GDP (PPP, US$) as share of world total (%), 2007	0.22

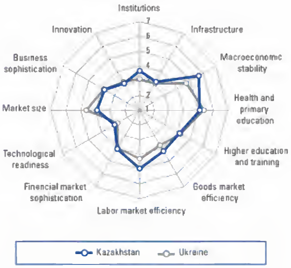
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

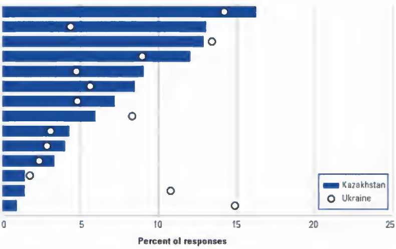
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**61**	**4.1**
GCI 2006-2007 (out of 122)	50	4.3
GCI 2005-2006 (out of 114)	51	4.1
Basic requirements	**66**	**4.4**
Institutions	80	3.7
Infrastructure	71	3.2
Macroeconomic stability	25	5.6
Health and primary education	94	5.1
Efficiency enhancers	**58**	**4.0**
Higher education and training	57	4.1
Goods market efficiency	63	4.2
Labor market efficiency	15	5.0
Financial market sophistication	80	4.0
Technological readiness	77	3.0
Market size	56	3.9
Innovation and sophistication factors	**84**	**3.4**
Business sophistication	85	3.8
Innovation	75	3.1

Stage of development: Transition from 1 to 2



The most problematic factors for doing business

Corruption	16.2%
Inadequately educated workforce	13.0%
Tax regulations	12.9%
Tax rates	12.0%
Inadequate supply of infrastructure	9.0%
Access to financing	8.5%
Inflation	7.2%
Inefficient government bureaucracy	5.9%
Poor work ethic in national labour force	4.3%
Crime and theft	4.0%
Restrictive labour regulations	3.3%
Foreign currency regulations	1.4%
Government instability/coups	1.4%
Policy instability	0.9%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Kazakhstan

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**61**	+
	Basic requirements	**66**	+
	Efficiency enhancers	**58**	+
	Innovation and sophistication factors	**84**	–
	1st pillar: Institutions	**80**	+
1.01	Property rights	91	+
1.02	Intellectual property protection	80	+
1.03	Diversion of public funds	62	+
1.04	Public trust of politicians	68	+
1.05	Judicial independence	100	+
1.06	Favoritism in decisions of government officials	61	+
1.07	Wastefulness of government spending	54	+
1.08	Burden of government regulation	59	+
1.09	Efficiency of legal framework	72	+
1.10	Transparency of government policymaking	75	+
1.11	Business costs of terrorism	82	–
1.12	Business costs of crime and violence	68	+
1.13	Organized crime	87	+
1.14	Reliability of police services	91	+
1.15	Ethical behavior of firms	102	+
1.16	Strength of auditing and reporting standards	85	+
1.17	Efficacy of corporate boards	49	+
1.18	Protection of minority shareholders' interests	112	+
	2nd pillar: Infrastructure	**71**	+
2.01	Quality of overall infrastructure	71	+
2.02	Quality of roads	109	+
2.03	Quality of railroad infrastructure	39	–
2.04	Quality of port infrastructure	88	–
2.05	Quality of air transport infrastructure	92	+
2.06	Available seat kilometers*	63	+
2.07	Quality of electricity supply	75	+
2.08	Telephone lines*	67	–
	3rd pillar: Macroeconomic stability	**25**	+
3.01	Government surplus/deficit*	15	+
3.02	National savings rate*	47	+
3.03	Inflation*	104	+
3.04	Interest rate spread*	5	+
3.05	Government debt*	6	+
	4th pillar: Health and primary education	**94**	–
4.01	Business impact of malaria	77	+
4.02	Malaria incidence*	60	–
4.03	Business impact of tuberculosis	107	+
4.04	Tuberculosis incidence*	96	–
4.05	Business impact of HIV/AIDS	87	+
4.06	HIV prevalence*	25	+
4.07	Infant mortality*	107	–
4.08	Life expectancy*	107	–
4.09	Quality of primary education	68	–
4.10	Primary enrollment*	74	+
4.11	Education expenditure*	50	+
	5th pillar: Higher education and training	**57**	–
5.01	Secondary enrollment*	30	+
5.02	Tertiary enrollment*	35	–
5.03	Quality of the educational system	64	–
5.04	Quality of math and science education	70	–
5.05	Quality of management schools	95	–
5.06	Internet access in schools	50	+
5.07	Local availability of research and training services	82	+
5.08	Extent of staff training	93	+
	6th pillar: Goods market efficiency	**63**	+
6.01	Intensity of local competition	74	+
6.02	Extent of market dominance	81	+
6.03	Effectiveness of anti-monopoly policy	81	+
6.04	Extent and effect of taxation	81	+
6.05	Total tax rate*	61	+
6.06	No. of procedures required to start a business*	27	+
6.07	Time required to start a business*	32	+
6.08	Agricultural policy costs	85	+
6.09	Prevalence of trade barriers	114	+
6.10	Trade-weighted tariff rate*	77	–
6.11	Prevalence of foreign ownership	97	+
6.12	Business impact of rules on FDI	91	+
6.13	Burden of customs procedures	100	+
6.14	Degree of customer orientation	58	+
6.15	Buyer sophistication	50	+
	7th pillar: Labor market efficiency	**15**	+
7.01	Cooperation in labor-employer relations	52	+
7.02	Flexibility of wage determination	20	+
7.03	Non-wage labor costs*	88	+
7.04	Rigidity of employment*	22	+
7.05	Hiring and firing practices	4	+
7.06	Firing costs*	12	+
7.07	Pay and productivity	23	+
7.08	Reliance on professional management	82	+
7.09	Brain drain	61	+
7.10	Female participation in labor force*	12	+
	8th pillar: Financial market sophistication	**80**	+
8.01	Financial market sophistication	73	+
8.02	Financing through local equity market	89	+
8.03	Ease of access to loans	55	+
8.04	Venture capital availability	49	+
8.05	Restriction on capital flows	105	–
8.06	Strength of investor protection*	35	+
8.07	Soundness of banks	86	+
8.08	Regulation of securities exchanges	113	+
8.09	Legal rights index*	47	–
	9th pillar: Technological readiness	**77**	+
9.01	Availability of latest technologies	90	+
9.02	Firm-level technology absorption	75	+
9.03	Laws relating to ICT	64	+
9.04	FDI and technology transfer	101	+
9.05	Mobile telephone subscribers*	83	–
9.06	Internet users*	112	–
9.07	Personal computers*	n.a.	–
9.08	Broadband Internet subscribers*	106	–
	10th pillar: Market size	**56**	–
10.01	Domestic market size*	54	–
10.02	Foreign market size*	49	–
	11th pillar: Business sophistication	**85**	–
11.01	Local supplier quantity	80	–
11.02	Local supplier quality	83	–
11.03	State of cluster development	94	–
11.04	Nature of competitive advantage	92	–
11.05	Value chain breadth	110	–
11.06	Control of international distribution	61	–
11.07	Production process sophistication	52	+
11.08	Extent of marketing	84	+
11.09	Willingness to delegate authority	93	+
	12th pillar: Innovation	**75**	–
12.01	Capacity for innovation	64	–
12.02	Quality of scientific research institutions	63	–
12.03	Company spending on R&D	65	+
12.04	University-industry research collaboration	71	–
12.05	Gov't procurement of advanced tech products	62	+
12.06	Availability of scientists and engineers	98	–
12.07	Utility patents*	83	–

* Hard data

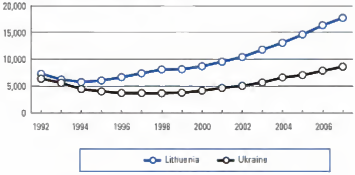
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Lithuania

Key indicators

Total population (millions), 2007	3.5
GDP (US$ billions), 2007	36.3
GDP (US$) per capita, 2007	10,472.3
GDP (PPP, US$) per capita, 2007	17,749.3
GDP (PPP, US$) as share of world total (%), 2007	0.08

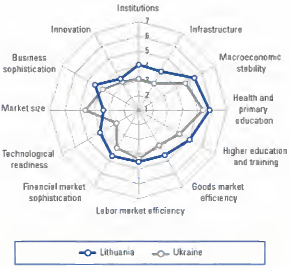
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

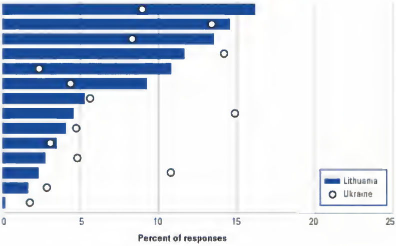
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**38**	**4.5**
GCI 2006-2007 (out of 122)	39	4.5
GCI 2005-2006 (out of 114)	42	4.3
Basic requirements	**43**	**4.8**
Institutions	58	4.1
Infrastructure	48	4.1
Macroeconomic stability	38	5.3
Health and primary education	43	5.8
Efficiency enhancers	**41**	**4.3**
Higher education and training	25	5.0
Goods market efficiency	44	4.5
Labor market efficiency	44	4.5
Financial market sophistication	54	4.6
Technological readiness	38	4.0
Market size	67	3.4
Innovation and sophistication factors	**44**	**3.9**
Business sophistication	42	4.4
Innovation	48	3.4

Stage of development: 2



The most problematic factors for doing business

Tax rates	16.2%
Tax regulations	14.5%
Inefficient government bureaucracy	13.5%
Corruption	11.6%
Restrictive labour regulations	10.8%
Inadequately educated workforce	9.2%
Access to financing	5.2%
Policy instability	4.5%
Inadequate supply of infrastructure	4.0%
Poor work ethic in national labour force	3.5%
Inflation	2.7%
Government instability/coups	2.3%
Crime and theft	1.6%
Foreign currency regulations	0.2%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Lithuania

The Global Competitiveness Index in detail

+ **better** than Ukraine – **worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**38**	+
	Basic requirements	**43**	+
	Efficiency enhancers	**41**	+
	Innovation and sophistication factors	**44**	+
	1st pillar: Institutions	**58**	+
1.01	Property rights	48	+
1.02	Intellectual property protection	60	+
1.03	Diversion of public funds	69	+
1.04	Public trust of politicians	59	+
1.05	Judicial independence	74	+
1.06	Favoritism in decisions of government officials	82	+
1.07	Wastefulness of government spending	77	+
1.08	Burden of government regulation	43	+
1.09	Efficiency of legal framework	70	+
1.10	Transparency of government policymaking	56	+
1.11	Business costs of terrorism	26	+
1.12	Business costs of crime and violence	56	+
1.13	Organized crime	58	+
1.14	Reliability of police services	80	+
1.15	Ethical behavior of firms	48	+
1.16	Strength of auditing and reporting standards	54	+
1.17	Efficacy of corporate boards	56	+
1.18	Protection of minority shareholders' interests	85	+
	2nd pillar: Infrastructure	**48**	+
2.01	Quality of overall infrastructure	50	+
2.02	Quality of roads	32	+
2.03	Quality of railroad infrastructure	30	+
2.04	Quality of port infrastructure	61	+
2.05	Quality of air transport infrastructure	73	+
2.06	Available seat kilometers*	99	–
2.07	Quality of electricity supply	47	+
2.08	Telephone lines*	58	–
	3rd pillar: Macroeconomic stability	**38**	+
3.01	Government surplus/deficit*	55	+
3.02	National savings rate*	87	–
3.03	Inflation*	57	+
3.04	Interest rate spread*	19	+
3.05	Government debt*	21	–
	4th pillar: Health and primary education	**43**	+
4.01	Business impact of malaria	47	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	70	+
4.04	Tuberculosis incidence*	72	+
4.05	Business impact of HIV/AIDS	34	+
4.06	HIV prevalence*	50	+
4.07	Infant mortality*	39	+
4.08	Life expectancy*	56	+
4.09	Quality of primary education	40	+
4.10	Primary enrollment*	83	+
4.11	Education expenditure*	21	+
	5th pillar: Higher education and training	**25**	+
5.01	Secondary enrollment*	20	+
5.02	Tertiary enrollment*	12	+
5.03	Quality of the educational system	44	+
5.04	Quality of math and science education	18	+
5.05	Quality of management schools	48	+
5.06	Internet access in schools	32	+
5.07	Local availability of research and training services	48	+
5.08	Extent of staff training	41	+
	6th pillar: Goods market efficiency	**44**	+
6.01	Intensity of local competition	37	+
6.02	Extent of market dominance	60	+
6.03	Effectiveness of anti-monopoly policy	43	+
6.04	Extent and effect of taxation	70	+
6.05	Total tax rate*	71	+
6.06	No. of procedures required to start a business*	27	+
6.07	Time required to start a business*	46	+
6.08	Agricultural policy costs	91	+
6.09	Prevalence of trade barriers	52	+
6.10	Trade-weighted tariff rate*	13	+
6.11	Prevalence of foreign ownership	81	+
6.12	Business impact of rules on FDI	97	+
6.13	Burden of customs procedures	46	+
6.14	Degree of customer orientation	29	+
6.15	Buyer sophistication	57	+
	7th pillar: Labor market efficiency	**44**	+
7.01	Cooperation in labor-employer relations	64	+
7.02	Flexibility of wage determination	11	+
7.03	Non-wage labor costs*	109	+
7.04	Rigidity of employment*	87	+
7.05	Hiring and firing practices	107	–
7.06	Firing costs*	47	–
7.07	Pay and productivity	22	+
7.08	Reliance on professional management	56	+
7.09	Brain drain	73	+
7.10	Female participation in labor force*	14	+
	8th pillar: Financial market sophistication	**54**	+
8.01	Financial market sophistication	54	+
8.02	Financing through local equity market	54	+
8.03	Ease of access to loans	47	+
8.04	Venture capital availability	47	+
8.05	Restriction on capital flows	67	+
8.06	Strength of investor protection*	45	+
8.07	Soundness of banks	52	+
8.08	Regulation of securities exchanges	35	+
8.09	Legal rights index*	69	–
	9th pillar: Technological readiness	**38**	+
9.01	Availability of latest technologies	57	+
9.02	Firm-level technology absorption	45	+
9.03	Laws relating to ICT	40	+
9.04	FDI and technology transfer	85	+
9.05	Mobile telephone subscribers*	2	+
9.06	Internet users*	31	+
9.07	Personal computers*	48	+
9.08	Broadband Internet subscribers*	34	+
	10th pillar: Market size	**67**	–
10.01	Domestic market size*	69	–
10.02	Foreign market size*	66	–
	11th pillar: Business sophistication	**42**	+
11.01	Local supplier quantity	49	+
11.02	Local supplier quality	43	+
11.03	State of cluster development	58	+
11.04	Nature of competitive advantage	38	+
11.05	Value chain breadth	24	+
11.06	Control of international distribution	38	+
11.07	Production process sophistication	43	+
11.08	Extent of marketing	53	+
11.09	Willingness to delegate authority	53	+
	12th pillar: Innovation	**48**	+
12.01	Capacity for innovation	45	–
12.02	Quality of scientific research institutions	43	+
12.03	Company spending on R&D	49	+
12.04	University-industry research collaboration	51	+
12.05	Gov't procurement of advanced tech products	63	+
12.06	Availability of scientists and engineers	43	+
12.07	Utility patents*	36	+

* Hard data

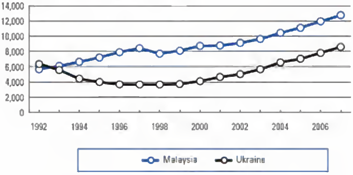
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Malaysia

Key indicators

Total population (millions), 2007	26.8
GDP (US$ billions), 2007	165.0
GDP (US$) per capita, 2007	6,146.4
GDP (PPP, US$) per capita, 2007	12,754.5
GDP (PPP, US$) as share of world total (%), 2007	0.48

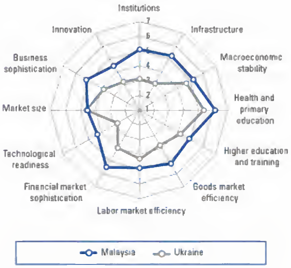
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

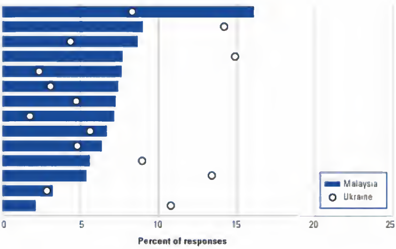
Stage of development: 2

	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**21**	**5.1**
GCI 2006-2007 (out of 122)	19	5.2
GCI 2005-2006 (out of 114)	23	4.9
Basic requirements	**21**	**5.4**
Institutions	20	5.2
Infrastructure	23	5.3
Macroeconomic stability	45	5.2
Health and primary education	26	6.1
Efficiency enhancers	**24**	**4.9**
Higher education and training	27	4.9
Goods market efficiency	20	5.2
Labor market efficiency	16	4.9
Financial market sophistication	19	5.5
Technological readiness	30	4.3
Market size	29	4.5
Innovation and sophistication factors	**19**	**4.8**
Business sophistication	18	5.2
Innovation	21	4.5



The most problematic factors for doing business

Inefficient government bureaucracy	16.1%
Corruption	9.0%
Inadequately educated workforce	8.6%
Policy instability	7.7%
Restrictive labour regulations	7.6%
Poor work ethic in national labour force	7.4%
Inadequate supply of infrastructure	7.2%
Foreign currency regulations	7.1%
Access to financing	6.6%
Inflation	6.3%
Tax rates	5.6%
Tax regulations	5.4%
Crime and theft	3.2%
Government instability/coups	2.1%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Malaysia

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**21**	+
	Basic requirements	**21**	+
	Efficiency enhancers	**24**	+
	Innovation and sophistication factors	**19**	+
	1st pillar: Institutions	**20**	+
1.01	Property rights	23	+
1.02	Intellectual property protection	25	+
1.03	Diversion of public funds	29	+
1.04	Public trust of politicians	18	+
1.05	Judicial independence	30	+
1.06	Favoritism in decisions of government officials	23	+
1.07	Wastefulness of government spending	6	+
1.08	Burden of government regulation	5	+
1.09	Efficiency of legal framework	18	+
1.10	Transparency of government policymaking	16	+
1.11	Business costs of terrorism	59	+
1.12	Business costs of crime and violence	46	+
1.13	Organized crime	42	+
1.14	Reliability of police services	31	+
1.15	Ethical behavior of firms	24	+
1.16	Strength of auditing and reporting standards	25	+
1.17	Efficacy of corporate boards	21	+
1.18	Protection of minority shareholders' interests	19	+
	2nd pillar: Infrastructure	**23**	+
2.01	Quality of overall infrastructure	18	+
2.02	Quality of roads	14	+
2.03	Quality of railroad infrastructure	17	+
2.04	Quality of port infrastructure	13	+
2.05	Quality of air transport infrastructure	15	+
2.06	Available seat kilometers*	22	+
2.07	Quality of electricity supply	30	+
2.08	Telephone lines*	69	–
	3rd pillar: Macroeconomic stability	**45**	+
3.01	Government surplus/deficit*	103	–
3.02	National savings rate*	20	+
3.03	Inflation*	54	+
3.04	Interest rate spread*	29	+
3.05	Government debt*	69	–
	4th pillar: Health and primary education	**26**	+
4.01	Business impact of malaria	69	+
4.02	Malaria incidence*	83	–
4.03	Business impact of tuberculosis	62	+
4.04	Tuberculosis incidence*	88	–
4.05	Business impact of HIV/AIDS	60	+
4.06	HIV prevalence*	77	+
4.07	Infant mortality*	46	+
4.08	Life expectancy*	56	+
4.09	Quality of primary education	17	+
4.10	Primary enrollment*	43	+
4.11	Education expenditure*	20	+
	5th pillar: Higher education and training	**27**	+
5.01	Secondary enrollment*	86	–
5.02	Tertiary enrollment*	60	–
5.03	Quality of the educational system	15	+
5.04	Quality of math and science education	13	+
5.05	Quality of management schools	23	+
5.06	Internet access in schools	31	+
5.07	Local availability of research and training services	21	+
5.08	Extent of staff training	16	+
	6th pillar: Goods market efficiency	**20**	+
6.01	Intensity of local competition	19	+
6.02	Extent of market dominance	21	+
6.03	Effectiveness of anti-monopoly policy	31	+
6.04	Extent and effect of taxation	15	+
6.05	Total tax rate*	28	+
6.06	No. of procedures required to start a business*	52	+
6.07	Time required to start a business*	55	+
6.08	Agricultural policy costs	2	+
6.09	Prevalence of trade barriers	48	+
6.10	Trade-weighted tariff rate*	48	–
6.11	Prevalence of foreign ownership	55	+
6.12	Business impact of rules on FDI	22	+
6.13	Burden of customs procedures	22	+
6.14	Degree of customer orientation	20	+
6.15	Buyer sophistication	24	+
	7th pillar: Labor market efficiency	**16**	+
7.01	Cooperation in labor-employer relations	8	+
7.02	Flexibility of wage determination	29	+
7.03	Non-wage labor costs*	50	+
7.04	Rigidity of employment*	12	+
7.05	Hiring and firing practices	44	–
7.06	Firing costs*	103	–
7.07	Pay and productivity	3	+
7.08	Reliance on professional management	20	+
7.09	Brain drain	25	+
7.10	Female participation in labor force*	105	–
	8th pillar: Financial market sophistication	**19**	+
8.01	Financial market sophistication	30	+
8.02	Financing through local equity market	19	+
8.03	Ease of access to loans	20	+
8.04	Venture capital availability	18	+
8.05	Restriction on capital flows	71	+
8.06	Strength of investor protection*	4	+
8.07	Soundness of banks	43	+
8.08	Regulation of securities exchanges	33	+
8.09	Legal rights index*	8	=
	9th pillar: Technological readiness	**30**	+
9.01	Availability of latest technologies	22	+
9.02	Firm-level technology absorption	15	+
9.03	Laws relating to ICT	14	+
9.04	FDI and technology transfer	5	+
9.05	Mobile telephone subscribers*	46	+
9.06	Internet users*	27	+
9.07	Personal computers*	40	+
9.08	Broadband Internet subscribers*	52	+
	10th pillar: Market size	**29**	–
10.01	Domestic market size*	38	–
10.02	Foreign market size*	16	+
	11th pillar: Business sophistication	**18**	+
11.01	Local supplier quantity	16	+
11.02	Local supplier quality	25	+
11.03	State of cluster development	5	+
11.04	Nature of competitive advantage	25	+
11.05	Value chain breadth	22	+
11.06	Control of international distribution	17	+
11.07	Production process sophistication	24	+
11.08	Extent of marketing	26	+
11.09	Willingness to delegate authority	19	+
	12th pillar: Innovation	**21**	+
12.01	Capacity for innovation	22	+
12.02	Quality of scientific research institutions	17	+
12.03	Company spending on R&D	11	+
12.04	University-industry research collaboration	16	+
12.05	Gov't procurement of advanced tech products	3	+
12.06	Availability of scientists and engineers	21	+
12.07	Utility patents*	33	+

* Hard data

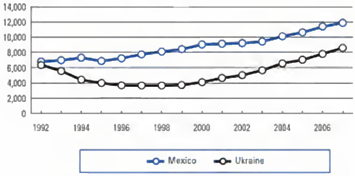
Note For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Mexico

Key indicators

Total population (millions), 2007	105.2
GDP (US$ billions), 2007	886.4
GDP (US$) per capita, 2007	8,426.3
GDP (PPP, US$) per capita, 2007	11,879.7
GDP (PPP, US$) as share of world total (%), 2007	1.75

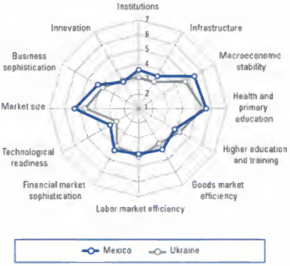
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

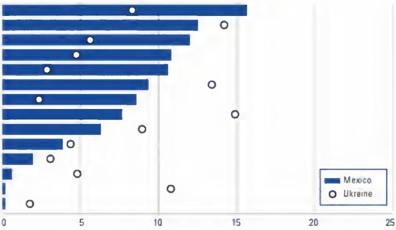
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**52**	**4.3**
GCI 2006-2007 (out of 122)	52	4.2
GCI 2005-2006 (out of 114)	53	4.1
Basic requirements	**56**	**4.5**
Institutions	85	3.6
Infrastructure	61	3.5
Macroeconomic stability	35	5.4
Health and primary education	55	5.6
Efficiency enhancers	**50**	**4.2**
Higher education and training	72	3.8
Goods market efficiency	61	4.2
Labor market efficiency	92	4.1
Financial market sophistication	67	4.3
Technological readiness	60	3.2
Market size	13	5.3
Innovation and sophistication factors	**60**	**3.7**
Business sophistication	54	4.2
Innovation	71	3.1

Stage of development: 2



The most problematic factors for doing business

Inefficient government bureaucracy	15.6%
Corruption	12.5%
Access to financing	12.0%
Inadequate supply of infrastructure	10.8%
Crime and theft	10.6%
Tax regulations	9.3%
Restrictive labour regulations	8.6%
Policy instability	7.6%
Tax rates	6.3%
Inadequately educated workforce	3.8%
Poor work ethic in national labour force	1.9%
Inflation	0.6%
Government instability/coups	0.2%
Foreign currency regulations	0.2%



Source: World Economic Forum, Executive Opinion Survey 2007

Percent of responses

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Mexico

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**52**	+
	Basic requirements	**56**	+
	Efficiency enhancers	**50**	+
	Innovation and sophistication factors	**60**	+
	1st pillar: Institutions	**85**	+
1.01	Property rights	77	+
1.02	Intellectual property protection	65	+
1.03	Diversion of public funds	80	+
1.04	Public trust of politicians	91	+
1.05	Judicial independence	75	+
1.06	Favoritism in decisions of government officials	90	+
1.07	Wastefulness of government spending	61	+
1.08	Burden of government regulation	112	–
1.09	Efficiency of legal framework	96	+
1.10	Transparency of government policymaking	76	+
1.11	Business costs of terrorism	53	+
1.12	Business costs of crime and violence	119	–
1.13	Organized crime	120	–
1.14	Reliability of police services	119	–
1.15	Ethical behavior of firms	51	+
1.16	Strength of auditing and reporting standards	69	+
1.17	Efficacy of corporate boards	67	+
1.18	Protection of minority shareholders' interests	68	+
	2nd pillar: Infrastructure	**61**	+
2.01	Quality of overall infrastructure	69	+
2.02	Quality of roads	59	+
2.03	Quality of railroad infrastructure	74	–
2.04	Quality of port infrastructure	91	–
2.05	Quality of air transport infrastructure	60	+
2.06	Available seat kilometers*	18	+
2.07	Quality of electricity supply	82	+
2.08	Telephone lines*	65	–
	3rd pillar: Macroeconomic stability	**35**	+
3.01	Government surplus/deficit*	49	+
3.02	National savings rate*	67	+
3.03	Inflation*	54	+
3.04	Interest rate spread*	46	+
3.05	Government debt*	23	–
	4th pillar: Health and primary education	**55**	+
4.01	Business impact of malaria	43	+
4.02	Malaria incidence*	76	–
4.03	Business impact of tuberculosis	37	+
4.04	Tuberculosis incidence*	39	+
4.05	Business impact of HIV/AIDS	57	+
4.06	HIV prevalence*	64	+
4.07	Infant mortality*	75	–
4.08	Life expectancy*	46	+
4.09	Quality of primary education	95	–
4.10	Primary enrollment*	23	+
4.11	Education expenditure*	33	+
	5th pillar: Higher education and training	**72**	–
5.01	Secondary enrollment*	80	–
5.02	Tertiary enrollment*	73	–
5.03	Quality of the educational system	92	–
5.04	Quality of math and science education	113	–
5.05	Quality of management schools	49	+
5.06	Internet access in schools	62	+
5.07	Local availability of research and training services	52	+
5.08	Extent of staff training	65	+
	6th pillar: Goods market efficiency	**61**	+
6.01	Intensity of local competition	66	+
6.02	Extent of market dominance	87	+
6.03	Effectiveness of anti-monopoly policy	77	+
6.04	Extent and effect of taxation	80	+
6.05	Total tax rate*	34	+
6.06	No. of procedures required to start a business*	37	+
6.07	Time required to start a business*	48	+
6.08	Agricultural policy costs	105	+
6.09	Prevalence of trade barriers	53	+
6.10	Trade-weighted tariff rate*	102	–
6.11	Prevalence of foreign ownership	32	+
6.12	Business impact of rules on FDI	46	+
6.13	Burden of customs procedures	74	+
6.14	Degree of customer orientation	59	+
6.15	Buyer sophistication	54	+
	7th pillar: Labor market efficiency	**92**	–
7.01	Cooperation in labor-employer relations	40	+
7.02	Flexibility of wage determination	72	–
7.03	Non-wage labor costs*	92	+
7.04	Rigidity of employment*	63	+
7.05	Hiring and firing practices	75	–
7.06	Firing costs*	95	–
7.07	Pay and productivity	44	–
7.08	Reliance on professional management	62	+
7.09	Brain drain	51	+
7.10	Female participation in labor force*	112	–
	8th pillar: Financial market sophistication	**67**	+
8.01	Financial market sophistication	49	+
8.02	Financing through local equity market	68	+
8.03	Ease of access to loans	88	–
8.04	Venture capital availability	86	–
8.05	Restriction on capital flows	31	+
8.06	Strength of investor protection*	25	+
8.07	Soundness of banks	61	+
8.08	Regulation of securities exchanges	42	+
8.09	Legal rights index*	118	–
	9th pillar: Technological readiness	**60**	+
9.01	Availability of latest technologies	73	+
9.02	Firm-level technology absorption	88	+
9.03	Laws relating to ICT	53	+
9.04	FDI and technology transfer	41	+
9.05	Mobile telephone subscribers*	69	+
9.06	Internet users*	59	+
9.07	Personal computers*	54	+
9.08	Broadband Internet subscribers*	50	+
	10th pillar: Market size	**13**	+
10.01	Domestic market size*	12	+
10.02	Foreign market size*	17	+
	11th pillar: Business sophistication	**54**	+
11.01	Local supplier quantity	66	–
11.02	Local supplier quality	49	+
11.03	State of cluster development	54	+
11.04	Nature of competitive advantage	60	+
11.05	Value chain breadth	46	+
11.06	Control of international distribution	71	–
11.07	Production process sophistication	56	+
11.08	Extent of marketing	50	+
11.09	Willingness to delegate authority	46	+
	12th pillar: Innovation	**71**	–
12.01	Capacity for innovation	58	–
12.02	Quality of scientific research institutions	65	–
12.03	Company spending on R&D	69	–
12.04	University-industry research collaboration	59	+
12.05	Gov't procurement of advanced tech products	93	–
12.06	Availability of scientists and engineers	96	–
12.07	Utility patents*	56	+

* Hard data

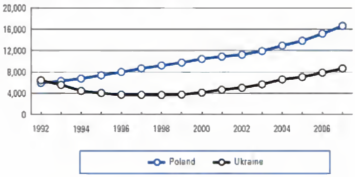
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Poland

Key indicators

Total population (millions), 2007	38.1
GDP (US$ billions), 2007	413.3
GDP (US$) per capita, 2007	10,858.1
GDP (PPP, US$) per capita, 2007	16,598.8
GDP (PPP, US$) as share of world total (%), 2007	0.85

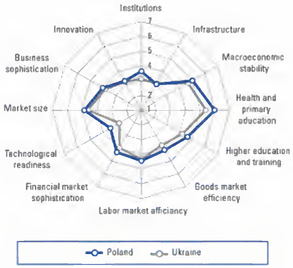
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

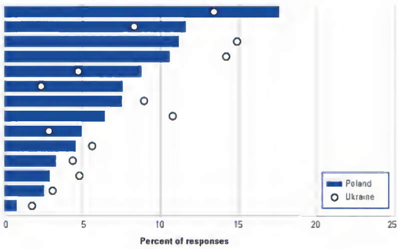
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**51**	**4.3**
GCI 2006-2007 (out of 122)	45	4.4
GCI 2005-2006 (out of 114)	47	4.1
Basic requirements	**64**	**4.4**
Institutions	82	3.6
Infrastructure	80	3.0
Macroeconomic stability	56	5.0
Health and primary education	36	6.0
Efficiency enhancers	**43**	**4.3**
Higher education and training	35	4.6
Goods market efficiency	69	4.1
Labor market efficiency	49	4.4
Financial market sophistication	64	4.3
Technological readiness	51	3.4
Market size	22	4.9
Innovation and sophistication factors	**61**	**3.7**
Business sophistication	68	4.0
Innovation	58	3.3

Stage of development: 2



The most problematic factors for doing business

Tax regulations	17.6%
Inefficient government bureaucracy	11.6%
Policy instability	11.1%
Corruption	10.5%
Inadequate supply of infrastructure	8.7%
Restrictive labour regulations	7.5%
Tax rates	7.5%
Government instability/coups	6.4%
Crime and theft	4.9%
Access to financing	4.6%
Inadequately educated workforce	3.3%
Inflation	2.9%
Poor work ethic in national labour force	2.5%
Foreign currency regulations	0.8%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Poland

The Global Competitiveness Index in detail

+ **better** than Ukraine – **worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**51**	+
	Basic requirements	**64**	+
	Efficiency enhancers	**43**	+
	Innovation and sophistication factors	**61**	+
	1st pillar: Institutions	**82**	+
1.01	Property rights	90	+
1.02	Intellectual property protection	67	+
1.03	Diversion of public funds	70	+
1.04	Public trust of politicians	81	+
1.05	Judicial independence	77	+
1.06	Favoritism in decisions of government officials	62	+
1.07	Wastefulness of government spending	102	+
1.08	Burden of government regulation	96	+
1.09	Efficiency of legal framework	89	+
1.10	Transparency of government policymaking	113	+
1.11	Business costs of terrorism	96	–
1.12	Business costs of crime and violence	81	–
1.13	Organized crime	101	–
1.14	Reliability of police services	77	+
1.15	Ethical behavior of firms	61	+
1.16	Strength of auditing and reporting standards	75	+
1.17	Efficacy of corporate boards	107	–
1.18	Protection of minority shareholders' interests	77	+
	2nd pillar: Infrastructure	**80**	–
2.01	Quality of overall infrastructure	88	–
2.02	Quality of roads	98	+
2.03	Quality of railroad infrastructure	50	–
2.04	Quality of port infrastructure	95	–
2.05	Quality of air transport infrastructure	101	+
2.06	Available seat kilometers*	49	+
2.07	Quality of electricity supply	62	+
2.08	Telephone lines*	41	+
	3rd pillar: Macroeconomic stability	**56**	+
3.01	Government surplus/deficit*	106	–
3.02	National savings rate*	84	–
3.03	Inflation*	3	+
3.04	Interest rate spread*	28	+
3.05	Government debt*	73	–
	4th pillar: Health and primary education	**36**	+
4.01	Business impact of malaria	78	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	80	+
4.04	Tuberculosis incidence*	43	+
4.05	Business impact of HIV/AIDS	67	+
4.06	HIV prevalence*	25	+
4.07	Infant mortality*	35	+
4.08	Life expectancy*	40	+
4.09	Quality of primary education	47	+
4.10	Primary enrollment*	36	+
4.11	Education expenditure*	24	+
	5th pillar: Higher education and training	**35**	+
5.01	Secondary enrollment*	34	+
5.02	Tertiary enrollment*	22	–
5.03	Quality of the educational system	49	–
5.04	Quality of math and science education	48	–
5.05	Quality of management schools	50	+
5.06	Internet access in schools	48	+
5.07	Local availability of research and training services	41	+
5.08	Extent of staff training	66	+
	6th pillar: Goods market efficiency	**69**	+
6.01	Intensity of local competition	70	+
6.02	Extent of market dominance	44	+
6.03	Effectiveness of anti-monopoly policy	56	+
6.04	Extent and effect of taxation	101	+
6.05	Total tax rate*	40	+
6.06	No. of procedures required to start a business*	65	=
6.07	Time required to start a business*	60	+
6.08	Agricultural policy costs	109	+
6.09	Prevalence of trade barriers	73	+
6.10	Trade-weighted tariff rate*	13	+
6.11	Prevalence of foreign ownership	91	+
6.12	Business impact of rules on FDI	100	+
6.13	Burden of customs procedures	59	+
6.14	Degree of customer orientation	87	–
6.15	Buyer sophistication	75	+
	7th pillar: Labor market efficiency	**49**	+
7.01	Cooperation in labor-employer relations	103	–
7.02	Flexibility of wage determination	76	–
7.03	Non-wage labor costs*	84	+
7.04	Rigidity of employment*	48	+
7.05	Hiring and firing practices	72	–
7.06	Firing costs*	17	=
7.07	Pay and productivity	72	–
7.08	Reliance on professional management	77	+
7.09	Brain drain	77	+
7.10	Female participation in labor force*	40	–
	8th pillar: Financial market sophistication	**64**	+
8.01	Financial market sophistication	68	+
8.02	Financing through local equity market	66	+
8.03	Ease of access to loans	63	+
8.04	Venture capital availability	43	+
8.05	Restriction on capital flows	73	+
8.06	Strength of investor protection*	25	+
8.07	Soundness of banks	94	+
8.08	Regulation of securities exchanges	52	+
8.09	Legal rights index*	69	–
	9th pillar: Technological readiness	**51**	+
9.01	Availability of latest technologies	80	+
9.02	Firm-level technology absorption	76	+
9.03	Laws relating to ICT	68	+
9.04	FDI and technology transfer	81	+
9.05	Mobile telephone subscribers*	44	+
9.06	Internet users*	44	+
9.07	Personal computers*	41	+
9.08	Broadband Internet subscribers*	43	+
	10th pillar: Market size	**22**	+
10.01	Domestic market size*	22	+
10.02	Foreign market size*	23	+
	11th pillar: Business sophistication	**68**	+
11.01	Local supplier quantity	78	–
11.02	Local supplier quality	65	+
11.03	State of cluster development	88	+
11.04	Nature of competitive advantage	51	+
11.05	Value chain breadth	33	+
11.06	Control of international distribution	74	–
11.07	Production process sophistication	62	+
11.08	Extent of marketing	67	+
11.09	Willingness to delegate authority	59	+
	12th pillar: Innovation	**58**	+
12.01	Capacity for innovation	44	–
12.02	Quality of scientific research institutions	64	–
12.03	Company spending on R&D	42	+
12.04	University-industry research collaboration	58	+
12.05	Gov't procurement of advanced tech products	89	–
12.06	Availability of scientists and engineers	74	–
12.07	Utility patents*	51	+

* Hard data

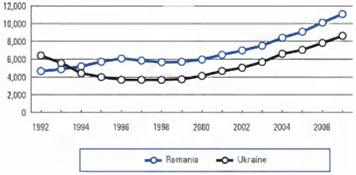
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Romania

Key indicators

Total population (millions), 2007	21.6
GDP (US$ billions), 2007	158.5
GDP (US$) per capita, 2007	7,351.7
GDP (PPP, US$) per capita, 2007	11,079.1
GDP (PPP, US$) as share of world total (%), 2007	0.33

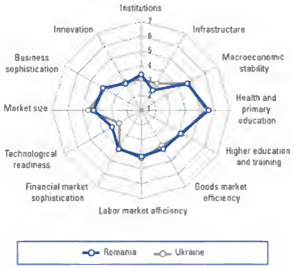
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

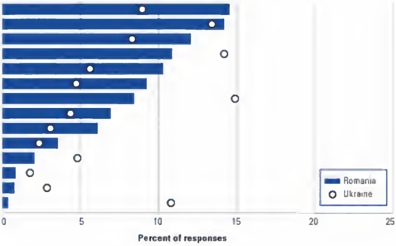
Stage of development: 2

	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**74**	**4.0**
GCI 2006-2007 (out of 122)	73	4.0
GCI 2005-2006 (out of 114)	63	3.9
Basic requirements	**88**	**4.1**
Institutions	94	3.4
Infrastructure	100	2.6
Macroeconomic stability	84	4.6
Health and primary education	52	5.6
Efficiency enhancers	**62**	**4.0**
Higher education and training	54	4.1
Goods market efficiency	74	4.0
Labor market efficiency	85	4.1
Financial market sophistication	78	4.0
Technological readiness	59	3.3
Market size	43	4.2
Innovation and sophistication factors	**73**	**3.5**
Business sophistication	73	4.0
Innovation	76	3.1



The most problematic factors for doing business

Tax rates	14.5%
Tax regulations	14.2%
Inefficient government bureaucracy	12.0%
Corruption	10.8%
Access to financing	10.3%
Inadequate supply of infrastructure	9.2%
Policy instability	8.4%
Inadequately educated workforce	6.9%
Poor work ethic in national labour force	6.1%
Restrictive labour regulations	3.5%
Inflation	2.0%
Foreign currency regulations	0.8%
Crime and theft	0.7%
Government instability/coups	0.4%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Romania

The Global Competitiveness Index in detail

+ better than Ukraine **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**74**	–
	Basic requirements	**88**	+
	Efficiency enhancers	**62**	+
	Innovation and sophistication factors	**73**	+
	1st pillar: Institutions	**94**	+
1.01	Property rights	84	+
1.02	Intellectual property protection	75	+
1.03	Diversion of public funds	86	–
1.04	Public trust of politicians	112	–
1.05	Judicial independence	93	+
1.06	Favoritism in decisions of government officials	116	–
1.07	Wastefulness of government spending	116	–
1.08	Burden of government regulation	44	+
1.09	Efficiency of legal framework	97	+
1.10	Transparency of government policymaking	126	–
1.11	Business costs of terrorism	54	+
1.12	Business costs of crime and violence	94	–
1.13	Organized crime	84	+
1.14	Reliability of police services	82	+
1.15	Ethical behavior of firms	103	+
1.16	Strength of auditing and reporting standards	84	+
1.17	Efficacy of corporate boards	83	+
1.18	Protection of minority shareholders' interests	107	+
	2nd pillar: Infrastructure	**100**	–
2.01	Quality of overall infrastructure	111	–
2.02	Quality of roads	123	–
2.03	Quality of railroad infrastructure	58	–
2.04	Quality of port infrastructure	99	–
2.05	Quality of air transport infrastructure	95	+
2.06	Available seat kilometers*	69	+
2.07	Quality of electricity supply	92	–
2.08	Telephone lines*	61	–
	3rd pillar: Macroeconomic stability	**84**	–
3.01	Government surplus/deficit*	82	=
3.02	National savings rate*	101	–
3.03	Inflation*	89	+
3.04	Interest rate spread*	100	–
3.05	Government debt*	14	+
	4th pillar: Health and primary education	**52**	+
4.01	Business impact of malaria	51	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	74	+
4.04	Tuberculosis incidence*	93	–
4.05	Business impact of HIV/AIDS	49	+
4.06	HIV prevalence*	1	+
4.07	Infant mortality*	64	–
4.08	Life expectancy*	56	+
4.09	Quality of primary education	41	+
4.10	Primary enrollment*	64	+
4.11	Education expenditure*	63	–
	5th pillar: Higher education and training	**54**	–
5.01	Secondary enrollment*	70	–
5.02	Tertiary enrollment*	45	–
5.03	Quality of the educational system	58	–
5.04	Quality of math and science education	12	+
5.05	Quality of management schools	80	+
5.06	Internet access in schools	49	+
5.07	Local availability of research and training services	49	+
5.08	Extent of staff training	84	+
	6th pillar: Goods market efficiency	**74**	+
6.01	Intensity of local competition	82	+
6.02	Extent of market dominance	56	+
6.03	Effectiveness of anti-monopoly policy	70	+
6.04	Extent and effect of taxation	108	+
6.05	Total tax rate*	73	+
6.06	No. of procedures required to start a business*	10	+
6.07	Time required to start a business*	13	+
6.08	Agricultural policy costs	114	+
6.09	Prevalence of trade barriers	68	+
6.10	Trade-weighted tariff rate*	111	–
6.11	Prevalence of foreign ownership	80	+
6.12	Business impact of rules on FDI	82	+
6.13	Burden of customs procedures	66	+
6.14	Degree of customer orientation	100	–
6.15	Buyer sophistication	71	+
	7th pillar: Labor market efficiency	**85**	–
7.01	Cooperation in labor-employer relations	124	–
7.02	Flexibility of wage determination	47	+
7.03	Non-wage labor costs*	114	+
7.04	Rigidity of employment*	92	+
7.05	Hiring and firing practices	81	–
7.06	Firing costs*	5	+
7.07	Pay and productivity	59	–
7.08	Reliance on professional management	83	+
7.09	Brain drain	110	–
7.10	Female participation in labor force*	49	–
	8th pillar: Financial market sophistication	**78**	+
8.01	Financial market sophistication	89	+
8.02	Financing through local equity market	83	+
8.03	Ease of access to loans	67	+
8.04	Venture capital availability	70	–
8.05	Restriction on capital flows	76	+
8.06	Strength of investor protection*	25	+
8.07	Soundness of banks	80	+
8.08	Regulation of securities exchanges	91	+
8.09	Legal rights index*	69	–
	9th pillar: Technological readiness	**59**	+
9.01	Availability of latest technologies	93	+
9.02	Firm-level technology absorption	84	+
9.03	Laws relating to ICT	67	+
9.04	FDI and technology transfer	36	+
9.05	Mobile telephone subscribers*	53	+
9.06	Internet users*	51	+
9.07	Personal computers*	57	+
9.08	Broadband Internet subscribers*	41	+
	10th pillar: Market size	**43**	–
10.01	Domestic market size*	39	–
10.02	Foreign market size*	52	–
	11th pillar: Business sophistication	**73**	+
11.01	Local supplier quantity	89	–
11.02	Local supplier quality	94	–
11.03	State of cluster development	7	+
11.04	Nature of competitive advantage	121	–
11.05	Value chain breadth	74	+
11.06	Control of international distribution	75	–
11.07	Production process sophistication	76	–
11.08	Extent of marketing	81	+
11.09	Willingness to delegate authority	90	+
	12th pillar: Innovation	**76**	–
12.01	Capacity for innovation	63	–
12.02	Quality of scientific research institutions	72	–
12.03	Company spending on R&D	89	–
12.04	University-industry research collaboration	90	–
12.05	Gov't procurement of advanced tech products	82	–
12.06	Availability of scientists and engineers	47	+
12.07	Utility patents*	63	–

* Hard data

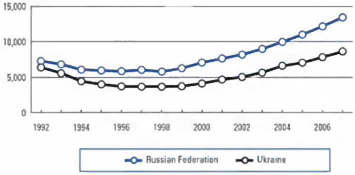
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Russian Federation

Key indicators

Total population (millions), 2007	142.1
GDP (US$ billions), 2007	1,223.7
GDP (US$) per capita, 2007	8,611.7
GDP (PPP, US$) per capita, 2007	13,432.2
GDP (PPP, US$) as share of world total (%), 2007	2.65

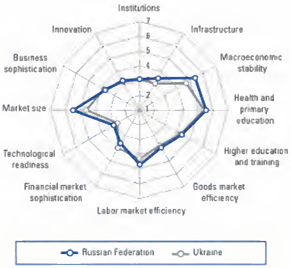
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

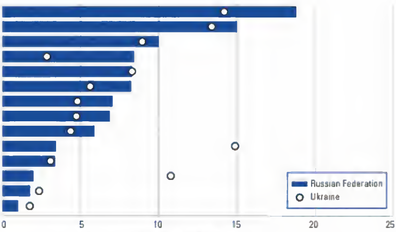
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**58**	**4.2**
GCI 2006-2007 (out of 122)	59	4.1
GCI 2005-2006 (out of 114)	49	4.1
Basic requirements	**68**	**4.4**
Institutions	116	3.1
Infrastructure	65	3.5
Macroeconomic stability	37	5.4
Health and primary education	60	5.5
Efficiency enhancers	**48**	**4.2**
Higher education and training	45	4.3
Goods market efficiency	84	3.9
Labor market efficiency	33	4.7
Financial market sophistication	109	3.6
Technological readiness	72	3.0
Market size	9	5.5
Innovation and sophistication factors	**77**	**3.5**
Business sophistication	88	3.7
Innovation	57	3.3

Stage of development: 2



The most problematic factors for doing business

Corruption	18.8%
Tax regulations	15.0%
Tax rates	10.0%
Crime and theft	8.4%
Inefficient government bureaucracy	8.3%
Access to financing	8.2%
Inflation	7.0%
Inadequate supply of infrastructure	6.9%
Inadequately educated workforce	5.9%
Policy instability	3.4%
Poor work ethic in national labour force	3.4%
Government instability/coups	2.0%
Restrictive labour regulations	1.8%
Foreign currency regulations	1.0%



Source: World Economic Forum, Executive Opinion Survey 2007

Percent of responses

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Russian Federation

The Global Competitiveness Index in detail

+ **better** than Ukraine   – **worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**58**	+
	Basic requirements	**68**	+
	Efficiency enhancers	**48**	+
	Innovation and sophistication factors	**77**	–
	1st pillar: Institutions	**116**	–
1.01	Property rights	122	–
1.02	Intellectual property protection	115	–
1.03	Diversion of public funds	94	–
1.04	Public trust of politicians	104	+
1.05	Judicial independence	106	+
1.06	Favoritism in decisions of government officials	107	–
1.07	Wastefulness of government spending	100	+
1.08	Burden of government regulation	118	–
1.09	Efficiency of legal framework	106	+
1.10	Transparency of government policymaking	118	+
1.11	Business costs of terrorism	108	–
1.12	Business costs of crime and violence	86	–
1.13	Organized crime	103	–
1.14	Reliability of police services	111	–
1.15	Ethical behavior of firms	120	+
1.16	Strength of auditing and reporting standards	95	+
1.17	Efficacy of corporate boards	38	+
1.18	Protection of minority shareholders' interests	125	+
	2nd pillar: Infrastructure	**65**	+
2.01	Quality of overall infrastructure	81	–
2.02	Quality of roads	106	+
2.03	Quality of railroad infrastructure	29	+
2.04	Quality of port infrastructure	72	+
2.05	Quality of air transport infrastructure	79	+
2.06	Available seat kilometers*	14	+
2.07	Quality of electricity supply	76	+
2.08	Telephone lines*	44	+
	3rd pillar: Macroeconomic stability	**37**	+
3.01	Government surplus/deficit*	9	+
3.02	National savings rate*	30	+
3.03	Inflation*	113	–
3.04	Interest rate spread*	77	+
3.05	Government debt*	11	+
	4th pillar: Health and primary education	**60**	+
4.01	Business impact of malaria	41	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	59	+
4.04	Tuberculosis incidence*	90	–
4.05	Business impact of HIV/AIDS	39	+
4.06	HIV prevalence*	100	+
4.07	Infant mortality*	56	+
4.08	Life expectancy*	96	–
4.09	Quality of primary education	46	+
4.10	Primary enrollment*	68	+
4.11	Education expenditure*	79	–
	5th pillar: Higher education and training	**45**	+
5.01	Secondary enrollment*	47	+
5.02	Tertiary enrollment*	14	+
5.03	Quality of the educational system	46	+
5.04	Quality of math and science education	38	+
5.05	Quality of management schools	78	+
5.06	Internet access in schools	55	+
5.07	Local availability of research and training services	79	+
5.08	Extent of staff training	96	+
	6th pillar: Goods market efficiency	**84**	+
6.01	Intensity of local competition	92	+
6.02	Extent of market dominance	78	+
6.03	Effectiveness of anti-monopoly policy	106	–
6.04	Extent and effect of taxation	97	+
6.05	Total tax rate*	90	+
6.06	No. of procedures required to start a business*	27	+
6.07	Time required to start a business*	52	+
6.08	Agricultural policy costs	117	+
6.09	Prevalence of trade barriers	104	+
6.10	Trade-weighted tariff rate*	108	–
6.11	Prevalence of foreign ownership	129	–
6.12	Business impact of rules on FDI	127	–
6.13	Burden of customs procedures	110	+
6.14	Degree of customer orientation	67	+
6.15	Buyer sophistication	58	+
	7th pillar: Labor market efficiency	**33**	+
7.01	Cooperation in labor-employer relations	67	+
7.02	Flexibility of wage determination	31	+
7.03	Non-wage labor costs*	107	+
7.04	Rigidity of employment*	79	+
7.05	Hiring and firing practices	15	+
7.06	Firing costs*	27	–
7.07	Pay and productivity	14	+
7.08	Reliance on professional management	70	+
7.09	Brain drain	49	+
7.10	Female participation in labor force*	18	+
	8th pillar: Financial market sophistication	**109**	–
8.01	Financial market sophistication	88	+
8.02	Financing through local equity market	81	+
8.03	Ease of access to loans	86	–
8.04	Venture capital availability	60	–
8.05	Restriction on capital flows	118	–
8.06	Strength of investor protection*	45	+
8.07	Soundness of banks	108	+
8.08	Regulation of securities exchanges	103	+
8.09	Legal rights index*	94	–
	9th pillar: Technological readiness	**72**	+
9.01	Availability of latest technologies	99	–
9.02	Firm-level technology absorption	103	–
9.03	Laws relating to ICT	85	–
9.04	FDI and technology transfer	115	–
9.05	Mobile telephone subscribers*	36	+
9.06	Internet users*	63	+
9.07	Personal computers*	56	+
9.08	Broadband Internet subscribers*	60	–
	10th pillar: Market size	**9**	+
10.01	Domestic market size*	10	+
10.02	Foreign market size*	7	+
	11th pillar: Business sophistication	**88**	–
11.01	Local supplier quantity	73	–
11.02	Local supplier quality	86	–
11.03	State of cluster development	85	+
11.04	Nature of competitive advantage	115	–
11.05	Value chain breadth	120	–
11.06	Control of international distribution	92	–
11.07	Production process sophistication	79	–
11.08	Extent of marketing	90	–
11.09	Willingness to delegate authority	82	+
	12th pillar: Innovation	**57**	+
12.01	Capacity for innovation	54	–
12.02	Quality of scientific research institutions	44	+
12.03	Company spending on R&D	50	+
12.04	University-industry research collaboration	61	+
12.05	Gov't procurement of advanced tech products	83	–
12.06	Availability of scientists and engineers	37	+
12.07	Utility patents*	45	+

* Hard data

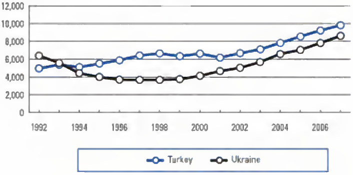
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Turkey

Key indicators

Total population (millions), 2007	73.6
GDP (US$ billions), 2007	482.0
GDP (US$) per capita, 2007	6,547.7
GDP (PPP, US$) per capita, 2007	9,815.6
GDP (PPP, US$) as share of world total (%), 2007	1.00

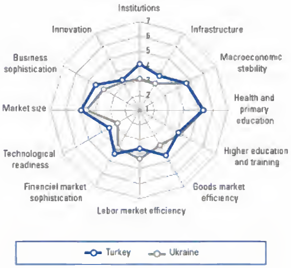
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

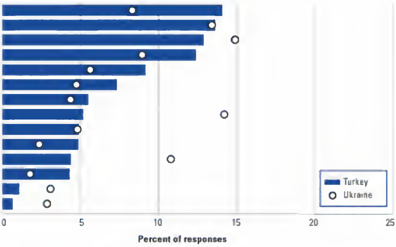
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**53**	**4.2**
GCI 2006-2007 (out of 122)	58	4.1
GCI 2005-2006 (out of 114)	72	3.8
Basic requirements	**63**	**4.4**
Institutions	55	4.1
Infrastructure	59	3.7
Macroeconomic stability	83	4.7
Health and primary education	77	5.3
Efficiency enhancers	**51**	**4.2**
Higher education and training	60	4.0
Goods market efficiency	43	4.5
Labor market efficiency	126	3.6
Financial market sophistication	61	4.4
Technological readiness	53	3.4
Market size	18	5.0
Innovation and sophistication factors	**48**	**3.9**
Business sophistication	41	4.4
Innovation	53	3.4

Stage of development: 2



The most problematic factors for doing business

Inefficient government bureaucracy	14.0%
Tax regulations	13.6%
Policy instability	12.9%
Tax rates	12.3%
Access to financing	9.1%
Inadequate supply of infrastructure	7.3%
Inadequately educated workforce	5.5%
Corruption	5.1%
Inflation	4.9%
Restrictive labour regulations	4.8%
Government instability/coups	4.4%
Foreign currency regulations	4.3%
Poor work ethic in national labour force	1.1%
Crime and theft	0.6%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Turkey

The Global Competitiveness Index in detail

+ better than Ukraine – **worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**53**	+
	Basic requirements	**63**	+
	Efficiency enhancers	**51**	+
	Innovation and sophistication factors	**48**	+
	1st pillar: Institutions	**55**	+
1.01	Property rights	58	+
1.02	Intellectual property protection	69	+
1.03	Diversion of public funds	54	+
1.04	Public trust of politicians	56	+
1.05	Judicial independence	50	+
1.06	Favoritism in decisions of government officials	49	+
1.07	Wastefulness of government spending	70	+
1.08	Burden of government regulation	80	+
1.09	Efficiency of legal framework	63	+
1.10	Transparency of government policymaking	59	+
1.11	Business costs of terrorism	100	–
1.12	Business costs of crime and violence	58	+
1.13	Organized crime	76	+
1.14	Reliability of police services	52	+
1.15	Ethical behavior of firms	40	+
1.16	Strength of auditing and reporting standards	62	+
1.17	Efficacy of corporate boards	91	+
1.18	Protection of minority shareholders' interests	56	+
	2nd pillar: Infrastructure	**59**	+
2.01	Quality of overall infrastructure	59	+
2.02	Quality of roads	50	+
2.03	Quality of railroad infrastructure	67	–
2.04	Quality of port infrastructure	63	+
2.05	Quality of air transport infrastructure	49	+
2.06	Available seat kilometers*	25	+
2.07	Quality of electricity supply	74	+
2.08	Telephone lines*	51	+
	3rd pillar: Macroeconomic stability	**83**	–
3.01	Government surplus/deficit*	41	+
3.02	National savings rate*	53	+
3.03	Inflation*	111	–
3.04	Interest rate spread*	76	+
3.05	Government debt*	90	–
	4th pillar: Health and primary education	**77**	–
4.01	Business impact of malaria	39	+
4.02	Malaria incidence*	82	–
4.03	Business impact of tuberculosis	41	+
4.04	Tuberculosis incidence*	48	+
4.05	Business impact of HIV/AIDS	16	+
4.06	HIV prevalence*	1	+
4.07	Infant mortality*	85	–
4.08	Life expectancy*	71	+
4.09	Quality of primary education	80	–
4.10	Primary enrollment*	80	+
4.11	Education expenditure*	81	–
	5th pillar: Higher education and training	**60**	–
5.01	Secondary enrollment*	81	–
5.02	Tertiary enrollment*	62	–
5.03	Quality of the educational system	70	–
5.04	Quality of math and science education	60	–
5.05	Quality of management schools	54	+
5.06	Internet access in schools	52	+
5.07	Local availability of research and training services	43	+
5.08	Extent of staff training	47	+
	6th pillar: Goods market efficiency	**43**	+
6.01	Intensity of local competition	31	+
6.02	Extent of market dominance	35	+
6.03	Effectiveness of anti-monopoly policy	34	+
6.04	Extent and effect of taxation	103	+
6.05	Total tax rate*	66	+
6.06	No. of procedures required to start a business*	37	+
6.07	Time required to start a business*	11	+
6.08	Agricultural policy costs	108	+
6.09	Prevalence of trade barriers	42	+
6.10	Trade-weighted tariff rate*	40	+
6.11	Prevalence of foreign ownership	52	+
6.12	Business impact of rules on FDI	55	+
6.13	Burden of customs procedures	57	+
6.14	Degree of customer orientation	37	+
6.15	Buyer sophistication	60	+
	7th pillar: Labor market efficiency	**126**	–
7.01	Cooperation in labor-employer relations	93	–
7.02	Flexibility of wage determination	88	–
7.03	Non-wage labor costs*	86	+
7.04	Rigidity of employment*	89	+
7.05	Hiring and firing practices	88	–
7.06	Firing costs*	112	–
7.07	Pay and productivity	83	–
7.08	Reliance on professional management	68	+
7.09	Brain drain	58	+
7.10	Female participation in labor force*	125	–
	8th pillar: Financial market sophistication	**61**	+
8.01	Financial market sophistication	36	+
8.02	Financing through local equity market	29	+
8.03	Ease of access to loans	74	–
8.04	Venture capital availability	82	–
8.05	Restriction on capital flows	14	+
8.06	Strength of investor protection*	45	+
8.07	Soundness of banks	92	+
8.08	Regulation of securities exchanges	39	+
8.09	Legal rights index*	94	–
	9th pillar: Technological readiness	**53**	+
9.01	Availability of latest technologies	47	+
9.02	Firm-level technology absorption	29	+
9.03	Laws relating to ICT	50	+
9.04	FDI and technology transfer	73	+
9.05	Mobile telephone subscribers*	55	+
9.06	Internet users*	62	+
9.07	Personal computers*	76	+
9.08	Broadband Internet subscribers*	49	+
	10th pillar: Market size	**18**	+
10.01	Domestic market size*	16	+
10.02	Foreign market size*	27	+
	11th pillar: Business sophistication	**41**	+
11.01	Local supplier quantity	22	+
11.02	Local supplier quality	39	+
11.03	State of cluster development	46	+
11.04	Nature of competitive advantage	83	–
11.05	Value chain breadth	36	+
11.06	Control of international distribution	27	+
11.07	Production process sophistication	48	+
11.08	Extent of marketing	51	+
11.09	Willingness to delegate authority	70	+
	12th pillar: Innovation	**53**	+
12.01	Capacity for innovation	47	–
12.02	Quality of scientific research institutions	50	+
12.03	Company spending on R&D	62	+
12.04	University-industry research collaboration	49	+
12.05	Gov't procurement of advanced tech products	73	+
12.06	Availability of scientists and engineers	41	+
12.07	Utility patents*	67	–

* Hard data

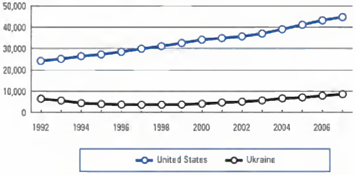
Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

United States

Key indicators

Total population (millions), 2007	302.5
GDP (US$ billions), 2007	13,794.2
GDP (US$) per capita, 2007	45,593.9
GDP (PPP, US$) per capita, 2007	44,764.6
GDP (PPP, US$) as share of world total (%), 2007	19.31

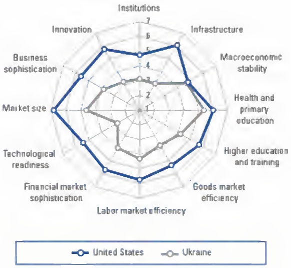
GDP (PPP, US$) per capita 1992-2007



Global Competitiveness Index

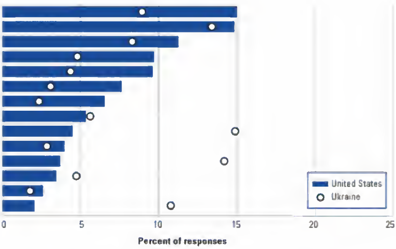
	Rank (out of 131)	Score (1–7)
Global Competitiveness Index 2007-2008	**1**	**5.7**
GCI 2006-2007 (out of 122)	1	5.8
GCI 2005-2006 (out of 114)	1	5.9
Basic requirements	**23**	**5.4**
Institutions	33	4.8
Infrastructure	6	6.1
Macroeconomic stability	75	4.8
Health and primary education	34	6.0
Efficiency enhancers	**1**	**5.8**
Higher education and training	5	5.7
Goods market efficiency	12	5.3
Labor market efficiency	1	5.7
Financial market sophistication	11	5.7
Technological readiness	9	5.4
Market size	1	6.8
Innovation and sophistication factors	**4**	**5.7**
Business sophistication	7	5.6
Innovation	1	5.8

Stage of development: 3



The most problematic factors for doing business

Tax rates	15.0%
Tax regulations	14.8%
Inefficient government bureaucracy	11.2%
Inflation	9.7%
Inadequately educated workforce	9.6%
Poor work ethic in national labour force	7.6%
Restrictive labour regulations	6.5%
Access to financing	5.3%
Policy instability	4.5%
Crime and theft	4.0%
Corruption	3.7%
Inadequate supply of infrastructure	3.4%
Foreign currency regulations	2.6%
Government instability/coups	2.0%



Source: World Economic Forum, Executive Opinion Survey 2007

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

United States

The Global Competitiveness Index in detail

+ better than Ukraine   **– worse** than Ukraine

	INDICATOR	RANK/131	
	Global Competitiveness Index 2007-2008	**1**	+
	Basic requirements	**23**	+
	Efficiency enhancers	**1**	+
	Innovation and sophistication factors	**4**	+
	1st pillar: Institutions	**33**	+
1.01	Property rights	30	+
1.02	Intellectual property protection	22	+
1.03	Diversion of public funds	28	+
1.04	Public trust of politicians	34	+
1.05	Judicial independence	37	+
1.06	Favoritism in decisions of government officials	45	+
1.07	Wastefulness of government spending	53	+
1.08	Burden of government regulation	40	+
1.09	Efficiency of legal framework	30	+
1.10	Transparency of government policymaking	31	+
1.11	Business costs of terrorism	124	–
1.12	Business costs of crime and violence	74	–
1.13	Organized crime	75	+
1.14	Reliability of police services	20	+
1.15	Ethical behavior of firms	27	+
1.16	Strength of auditing and reporting standards	24	+
1.17	Efficacy of corporate boards	17	+
1.18	Protection of minority shareholders' interests	20	+
	2nd pillar: Infrastructure	**6**	+
2.01	Quality of overall infrastructure	9	+
2.02	Quality of roads	8	+
2.03	Quality of railroad infrastructure	14	+
2.04	Quality of port infrastructure	11	+
2.05	Quality of air transport infrastructure	9	+
2.06	Available seat kilometers*	1	+
2.07	Quality of electricity supply	18	+
2.08	Telephone lines*	7	+
	3rd pillar: Macroeconomic stability	**75**	+
3.01	Government surplus/deficit*	91	–
3.02	National savings rate*	107	–
3.03	Inflation*	43	+
3.04	Interest rate spread*	20	+
3.05	Government debt*	89	–
	4th pillar: Health and primary education	**34**	+
4.01	Business impact of malaria	56	+
4.02	Malaria incidence*	1	=
4.03	Business impact of tuberculosis	52	+
4.04	Tuberculosis incidence*	3	+
4.05	Business impact of HIV/AIDS	86	+
4.06	HIV prevalence*	84	+
4.07	Infant mortality*	32	+
4.08	Life expectancy*	24	+
4.09	Quality of primary education	28	+
4.10	Primary enrollment*	69	+
4.11	Education expenditure*	43	+
	5th pillar: Higher education and training	**5**	+
5.01	Secondary enrollment*	42	+
5.02	Tertiary enrollment*	6	+
5.03	Quality of the educational system	17	+
5.04	Quality of math and science education	45	–
5.05	Quality of management schools	6	+
5.06	Internet access in schools	12	+
5.07	Local availability of research and training services	2	+
5.08	Extent of staff training	11	+
	6th pillar: Goods market efficiency	**12**	+
6.01	Intensity of local competition	8	+
6.02	Extent of market dominance	8	+
6.03	Effectiveness of anti-monopoly policy	14	+
6.04	Extent and effect of taxation	48	+
6.05	Total tax rate*	63	+
6.06	No. of procedures required to start a business*	10	+
6.07	Time required to start a business*	3	+
6.08	Agricultural policy costs	44	+
6.09	Prevalence of trade barriers	35	+
6.10	Trade-weighted tariff rate*	7	+
6.11	Prevalence of foreign ownership	46	+
6.12	Business impact of rules on FDI	51	+
6.13	Burden of customs procedures	45	+
6.14	Degree of customer orientation	12	+
6.15	Buyer sophistication	12	+
	7th pillar: Labor market efficiency	**1**	+
7.01	Cooperation in labor-employer relations	22	+
7.02	Flexibility of wage determination	24	+
7.03	Non-wage labor costs*	25	+
7.04	Rigidity of employment*	1	+
7.05	Hiring and firing practices	9	+
7.06	Firing costs*	1	+
7.07	Pay and productivity	11	+
7.08	Reliance on professional management	17	+
7.09	Brain drain	1	+
7.10	Female participation in labor force*	28	–
	8th pillar: Financial market sophistication	**11**	+
8.01	Financial market sophistication	5	+
8.02	Financing through local equity market	14	+
8.03	Ease of access to loans	11	+
8.04	Venture capital availability	1	+
8.05	Restriction on capital flows	54	+
8.06	Strength of investor protection*	5	+
8.07	Soundness of banks	26	+
8.08	Regulation of securities exchanges	31	+
8.09	Legal rights index*	17	–
	9th pillar: Technological readiness	**9**	+
9.01	Availability of latest technologies	6	+
9.02	Firm-level technology absorption	4	+
9.03	Laws relating to ICT	12	+
9.04	FDI and technology transfer	35	+
9.05	Mobile telephone subscribers*	48	+
9.06	Internet users*	9	+
9.07	Personal computers*	2	+
9.08	Broadband Internet subscribers*	16	+
	10th pillar: Market size	**1**	+
10.01	Domestic market size*	1	+
10.02	Foreign market size*	2	+
	11th pillar: Business sophistication	**7**	+
11.01	Local supplier quantity	9	+
11.02	Local supplier quality	11	+
11.03	State of cluster development	2	+
11.04	Nature of competitive advantage	16	+
11.05	Value chain breadth	15	+
11.06	Control of international distribution	7	+
11.07	Production process sophistication	11	+
11.08	Extent of marketing	1	+
11.09	Willingness to delegate authority	11	+
	12th pillar: Innovation	**1**	+
12.01	Capacity for innovation	9	+
12.02	Quality of scientific research institutions	2	+
12.03	Company spending on R&D	2	+
12.04	University-industry research collaboration	1	+
12.05	Gov't procurement of advanced tech products	5	+
12.06	Availability of scientists and engineers	12	+
12.07	Utility patents*	1	+

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 167

Ukraine's Regions

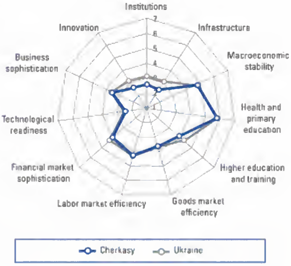
Cherkasy

Key indicators

Population (millions), 2006	1.33
Gross Regional Product (UAH millions), 2005	9,014
As share of Ukraine GDP (%), 2005	2.0
Gross Regional Product (UAH) per capita, 2005	6,681

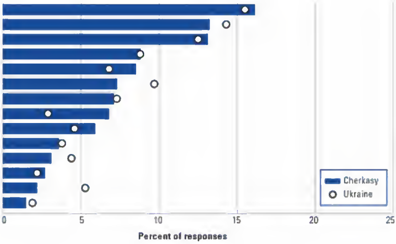
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**12**	**93**	**3.9**
Basic requirements	**12**	**105**	**3.9**
1st pillar: Institutions	12	131	2.7
2nd pillar: Infrastructure	12	104	2.5
3rd pillar: Macroeconomic stability	7	86	4.7
4th pillar: Health and primary education	8	81	5.7
Efficiency enhancers	**11**	**77**	**3.9**
5th pillar: Higher education and training	11	74	3.9
6th pillar: Goods market efficiency	9	101	3.7
7th pillar: Labor market efficiency	5	68	4.2
8th pillar: Financial market sophistication	10	81	4.0
9th pillar: Technological readiness	8	99	2.5
Innovation and sophistication factors	**12**	**104**	**3.1**
11th pillar: Business sophistication	10	91	3.6
12th pillar: Innovation	12	113	2.7



The most problematic factors for doing business

Policy instability	16.1%
Tax regulations	13.2%
Corruption	13.1%
Government instability/coups	8.8%
Inefficient government bureaucracy	8.5%
Access to financing	7.3%
Tax rates	7.1%
Poor work ethic in national labour force	6.8%
Inadequately educated workforce	5.9%
Crime and theft	3.6%
Inadequate supply of infrastructure	3.1%
Restrictive labour regulations	2.7%
Inflation	2.2%
Foreign currency regulations	1.5%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

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The Global Competitiveness Index in detail

🟦 competitive **advantages**
■ competitive **disadvantages**

+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**12**	**93**		**3.9**	**Bosnia and Herzegovina**	**−**	**4.1**	**4.2 Kyiv**
	Basic requirements	**12**	**105**		**3.9**	**Moldova**	**−**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**11**	**77**		**3.9**	**Mauritius**	**−**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**12**	**104**		**3.1**	**Armenia**	**−**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**12**	**131**		**2.7**	**Kyrgyz Republic**	**−**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	12	130	■	2.9	Argentina	−	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	12	129	■	2.1	Chad	−	2.6	3.0 Kyiv
1.03	Diversion of public funds	12	109	■	2.7	Mali	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	12	129	■	1.3	Venezuela	−	1.8	2.6 Sumy
1.05	Judicial independence	11	125	■	2.1	Georgia	−	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	11	124	■	2.1	Zimbabwe	−	2.7	3.4 Crimea
1.07	Wastefulness of government spending	12	130	■	1.8	Zambia	−	2.5	3.0 Donetsk
1.08	Burden of government regulation	11	128	■	2.1	Bosnia and Herzegovina	−	2.7	3.5 Poltava
1.09	Efficiency of legal framework	12	131	■	2.2	Chad	−	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	11	133	■	2.5	Indonesia	−	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	8	70	■	5.1	Malaysia	−	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	12	113	■	3.0	Kyrgyz Republic	−	4.1	5.2 Zakarpattya
1.13	Organized crime	12	119	■	3.3	Brazil	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	12	127	■	2.5	Bosnia and Herzegovina	−	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	3	115	■	3.3	Venezuela	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	11	128	■	3.2	Cameroon	−	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	7	91	■	4.2	Tanzania	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	11	133	■	2.2	Russia	−	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**12**	**104**		**2.5**	**Venezuela**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	12	108	■	2.5	Indonesia	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	10	129	■	1.6	Cameroon	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	11	56	■	3.3	Bulgaria	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	12	113	■	2.2	Costa Rica	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	11	121	■	2.7	Mongolia	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	■	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	6	90	■	3.7	Sri Lanka	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	6	61	■	23.0	Slovak Republic	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**7**	**86**		**4.7**	**Suriname**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	■	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	5	116	■	10.2	Argentina	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	10	99	■	8.8	Guatemala	−	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**8**	**81**		**5.7**	**Colombia**	**−**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	10	119	■	4.1	Guyana	−	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	6	71	■	81.5	Nicaragua	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	10	98	■	4.4	Pakistan	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	■	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	8	63	■	13.3	Russia	−	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	■	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	9	96	■	87.2	Latvia	−	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**11**	**74**		**3.9**	**Mexico**	**−**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	9	62	■	3.7	Russia	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	9	66	■	4.2	Moldova	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	5	98	■	3.4	Suriname	+	3.4	4.1 Lviv
5.06	Internet access in schools	9	110	■	2.4	Armenia	−	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	11	109	■	3.0	Madagascar	−	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	9	121	■	2.6	Bulgaria	−	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**9**	**101**		**3.7**	**Botswana**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	8	84	■	4.5	Botswana	−	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	8	88	■	3.3	Russia	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	12	126	■	2.7	Timor-Leste	−	3.2	3.6 Lviv
6.04	Extent and effect of taxation	12	134	■	1.5	Brazil	−	2.4	3.7 Zakarpattya

Cherkasy

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	9	130	■	2.5	Kyrgyz Republic	–	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	11	132	■	3.1	Timor-Leste	–	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	8	126	■	3.7	Vietnam	–	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	11	131	■	3.3	Kuwait	–	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	3	57	■	4.7	El Salvador	+	4.5	5.0 Donetsk
6.15	Buyer sophistication	5	59	■	4.2	Turkey	+	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**5**	**68**		**4.2**	**Trinidad and Tobago**	**–**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	4	72	■	4.5	Malta	+	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	1	24	🟦	5.8	Russia	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	1	8	🟦	5.6	Kazakhstan	+	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	7	49	🟦	4.4	India	–	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	12	127	■	3.3	Macedonia, FYR	–	3.7	4.1 Zakarpattya
7.09	Brain drain	10	113	■	2.4	Chad	–	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**10**	**81**		**4.0**	**Peru**	**–**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	11	97	■	3.0	Honduras	–	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	9	105	■	3.6	Benin	–	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	8	95	■	2.7	Korea	–	2.8	4.3 Sumy
8.04	Venture capital availability	12	118	■	2.3	Benin	–	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	5	112	■	4.5	Macedonia, FYR	+	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**8**	**99**		**2.5**	**Pakistan**	**–**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	12	130	■	2.0	Ethiopia	–	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	7	105	■	4.1	Argentina	–	4.1	4.7 Kyiv
9.03	Laws relating to ICT	5	82	■	3.2	Indonesia	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	1	99	■	4.4	Nicaragua	+	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	3	83	■	4.0	China	+	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**10**	**91**		**3.6**	**Tanzania**	**–**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	10	86	■	4.4	Bulgaria	–	4.6	5.1 Zakarpattya
11.02	Local supplier quality	10	86	■	3.9	Dominican Republic	–	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	10	115	■	2.8	Suriname	–	3.2	4.0 Sumy
11.04	Nature of competitive advantage	8	94	■	3.0	Mongolia	–	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	6	79	■	3.3	Romania	–	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	3	47	🟦	4.2	Bahrain	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	2	55	■	3.9	Azerbaijan	+	3.6	4.7 Zakarpattya
11.08	Extent of marketing	7	96	■	3.6	Egypt	–	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	12	115	■	2.8	Nicaragua	–	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**12**	**113**		**2.7**	**Dominican Republic**	**–**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	4	47	🟦	3.6	China	+	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	12	102	■	3.2	Guatemala	–	4.0	4.5 Kyiv
12.03	Company spending on R&D	12	125	■	2.2	Bahrain	–	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	12	118	■	2.2	Georgia	–	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	11	121	■	3.0	Lesotho	–	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	8	101	■	3.8	Slovenia	–	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

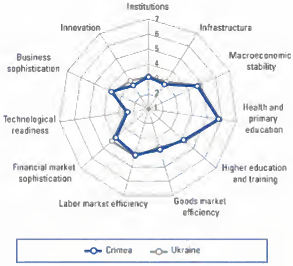
Crimea

Key indicators

Population (millions), 2006	1.98
Gross Regional Product (UAH millions), 2005	12,848
As share of Ukraine GDP (%), 2005	2.9
Gross Regional Product (UAH) per capita, 2005	6,460

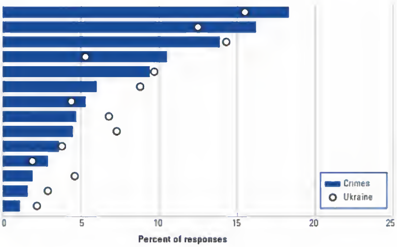
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**9**	**81**	**4.0**
Basic requirements	**9**	**90**	**4.1**
1st pillar: Institutions	7	105	3.1
2nd pillar: Infrastructure	9	82	2.9
3rd pillar: Macroeconomic stability	9	91	4.6
4th pillar: Health and primary education	9	83	5.7
Efficiency enhancers	**10**	**76**	**3.9**
5th pillar: Higher education and training	8	63	4.1
6th pillar: Goods market efficiency	8	97	3.8
7th pillar: Labor market efficiency	9	75	4.2
8th pillar: Financial market sophistication	12	93	3.9
9th pillar: Technological readiness	11	107	2.4
Innovation and sophistication factors	**9**	**90**	**3.3**
11th pillar: Business sophistication	6	81	3.7
12th pillar: Innovation	11	98	2.9



The most problematic factors for doing business

Policy instability	18.3%
Corruption	16.2%
Tax regulations	13.9%
Inflation	10.5%
Access to financing	9.4%
Government instability/coups	6.0%
Inadequate supply of infrastructure	5.3%
Inefficient government bureaucracy	4.7%
Tax rates	4.5%
Crime and theft	3.6%
Foreign currency regulations	2.9%
Inadequately educated workforce	1.9%
Poor work ethic in national labour force	1.6%
Restrictive labour regulations	1.1%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Crimea

The Global Competitiveness Index in detail

🟦 competitive advantages
◼ competitive disadvantages

+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**9**	**81**		**4.0**	**Romania**	**−**	**4.1**	**4.2 Kyiv**
	Basic requirements	**9**	**90**		**4.1**	**Suriname**	**−**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**10**	**76**		**3.9**	**Mauritius**	**−**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**9**	**90**		**3.3**	**Uganda**	**−**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**7**	**105**		**3.1**	**Moldova**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	11	123	◼	3.0	Bolivia	−	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	7	106	◼	2.6	Ecuador	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	9	91	◼	3.1	Mauritania	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	8	104	◼	1.7	Kenya	−	1.8	2.6 Sumy
1.05	Judicial independence	3	90	◼	2.9	Timor-Leste	+	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	1	41	🟦	3.4	Gambia, The	+	2.7	3.4 Crimea
1.07	Wastefulness of government spending	7	101	◼	2.6	Czech Republic	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	9	122	◼	2.2	Mauritius	−	2.7	3.5 Poltava
1.09	Efficiency of legal framework	4	93	◼	3.0	Azerbaijan	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	7	115	◼	2.9	Bulgaria	−	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	10	87	◼	4.9	Thailand	−	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	5	73	◼	4.0	Panama	−	4.1	5.2 Zakarpattya
1.13	Organized crime	5	82	◼	4.3	Dominican Republic	+	4.2	5.9 Zakarpattya
1.14	Reliability of police services	4	87	◼	3.5	Pakistan	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	5	120	◼	3.1	Russia	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	9	120	◼	3.4	Madagascar	−	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	6	90	◼	4.2	Tanzania	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	5	122	◼	2.9	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**9**	**82**		**2.9**	**Kazakhstan**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	9	81	◼	3.0	Poland	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	7	119	◼	1.9	Albania	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	10	53	◼	3.4	South Africa	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	10	91	◼	2.9	Zimbabwe	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	3	86	◼	3.8	Slovak Republic	+	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	◼	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	5	87	◼	3.8	Romania	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	6	61	◼	23.0	Slovak Republic	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**9**	**91**		**4.6**	**Romania**	**−**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	◼	n/a	Belgium, Mozambique		-2.3	
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	8	121	◼	11.5	Azerbaijan	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	9	98	◼	8.7	Guatemala	−	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**9**	**83**		**5.7**	**Uruguay**	**−**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	6	93	◼	5.0	Macedonia, FYR	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	10	82	◼	103.6	Armenia	−	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	7	82	◼	4.8	Panama	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	◼	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	7	58	◼	13.0	Russia	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	◼	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	10	97	◼	87.1	Latvia	−	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**8**	**63**		**4.1**	**Romania**	**−**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	11	78	◼	3.4	Jamaica	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	10	72	◼	4.1	Georgia	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	6	99	◼	3.4	Suriname	+	3.4	4.1 Lviv
5.06	Internet access in schools	6	90	◼	2.9	Azerbaijan	+	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	4	72	◼	3.7	Russia	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	4	89	◼	3.1	Morocco	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**8**	**97**		**3.8**	**Moldova**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	10	106	◼	4.2	Poland	−	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	4	70	◼	3.5	Mali	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	5	85	◼	3.4	Mauritius	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	8	119	◼	2.3	Cameroon	−	2.4	3.7 Zakarpattya

Crimea

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	7	126	■	2.6	Moldova	−	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	8	114	■	3.6	Albania	−	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	10	129	■	3.6	Timor-Leste	−	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	12	132	■	3.3	Kuwait	−	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	8	86	■	4.3	Dominican Republic	−	4.5	5.0 Donetsk
6.15	Buyer sophistication	4	53	■	4.3	Mauritius	+	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**9**	**75**		**4.2**	**Burkina Faso**	**−**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	6	80	■	4.4	Egypt	+	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	12	100	■	4.6	Mali	−	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	2	11	🟦	5.4	Kyrgyz Republic	+	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	12	78	■	4.0	Peru	−	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	8	113	■	3.6	Ecuador	−	3.7	4.1 Zakarpattya
7.09	Brain drain	3	72	■	3.1	Kazakhstan	+	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**12**	**93**		**3.9**	**Turkey**	**−**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	12	106	■	2.8	Bosnia and Herzegovina	−	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	11	107	■	3.6	Benin	−	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	5	79	■	2.9	Mexico	+	2.8	4.3 Sumy
8.04	Venture capital availability	6	64	■	3.2	Tanzania	+	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	12	132	■	3.8	China	−	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**11**	**107**		**2.4**	**Moldova**	**−**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	10	115	■	2.5	Bangladesh	−	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	12	118	■	3.7	Burundi	−	4.1	4.7 Kyiv
9.03	Laws relating to ICT	8	94	■	3.0	Russia	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	10	131	■	3.8	Chad	−	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	7	92	■	3.1	Egypt	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**6**	**81**		**3.7**	**Azerbaijan**	**−**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	8	75	■	4.6	Croatia	−	4.6	5.1 Zakarpattya
11.02	Local supplier quality	7	81	■	4.0	Sri Lanka	−	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	2	39	🟦	3.9	Nigeria	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	4	72	■	3.3	Tanzania	+	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	8	86	■	3.1	Azerbaijan	−	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	12	115	■	3.4	Botswana	−	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	12	91	■	3.1	Morocco	−	3.6	4.7 Zakarpattya
11.08	Extent of marketing	6	94	■	3.6	Paraguay	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	7	83	■	3.3	Kenya	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**11**	**98**		**2.9**	**Mongolia**	**−**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	12	78	■	3.1	Macedonia, FYR	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	9	75	■	3.7	Romania	−	4.0	4.5 Kyiv
12.03	Company spending on R&D	11	106	■	2.7	Bulgaria	−	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	6	73	■	2.9	Mauritius	+	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	10	115	■	3.1	Chad	−	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	11	110	■	3.7	Kazakhstan	−	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

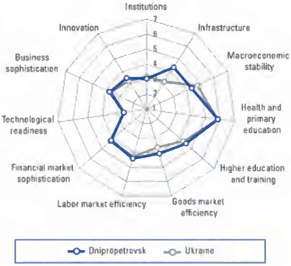
Dnipropetrovsk

Key indicators

Population (millions), 2006	3.42
Gross Regional Product (UAH millions), 2005	41,227
As share of Ukraine GDP (%), 2005	9.3
Gross Regional Product (UAH) per capita, 2005	11,909

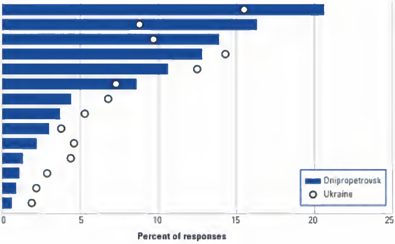
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**2**	**54**	**4.2**
Basic requirements	**2**	**66**	**4.4**
1st pillar: Institutions	8	113	3.0
2nd pillar: Infrastructure	1	36	4.3
3rd pillar: Macroeconomic stability	12	109	4.3
4th pillar: Health and primary education	4	73	5.8
Efficiency enhancers	**2**	**54**	**4.1**
5th pillar: Higher education and training	1	39	4.5
6th pillar: Goods market efficiency	2	66	4.1
7th pillar: Labor market efficiency	1	44	4.4
8th pillar: Financial market sophistication	4	64	4.2
9th pillar: Technological readiness	6	95	2.6
Innovation and sophistication factors	**3**	**61**	**3.6**
11th pillar: Business sophistication	5	80	3.7
12th pillar: Innovation	1	40	3.5



The most problematic factors for doing business

Policy instability	20.6%
Government instability/coups	16.3%
Access to financing	13.9%
Tax regulations	12.8%
Corruption	10.6%
Tax rates	8.6%
Inefficient government bureaucracy	4.4%
Inflation	3.7%
Crime and theft	3.0%
Inadequately educated workforce	2.2%
Inadequate supply of infrastructure	1.3%
Poor work ethic in national labour force	1.1%
Restrictive labour regulations	0.9%
Foreign currency regulations	0.6%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Dnipropetrovsk

The Global Competitiveness Index in detail

🟦 competitive **advantages**
▨ competitive **disadvantages**

+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**2**	**54**		**4.2**	**Croatia**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**2**	**66**		**4.4**	**Uruguay**	**+**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**2**	**54**		**4.1**	**Mexico**	**+**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**3**	**61**		**3.6**	**Barbados**	**+**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**8**	**113**		**3.0**	**Mongolia**	**−**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	10	122	▨	3.1	Bolivia	−	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	9	110	▨	2.5	Kyrgyz Republic	−	2.6	3.0 Kyiv
1.03	Diversion of public funds	4	63	▨	3.6	Georgia	+	3.4	4.9 Donetsk
1.04	Public trust of politicians	6	96	▨	1.8	Moldova	−	1.8	2.6 Sumy
1.05	Judicial independence	7	109	▨	2.5	Honduras	−	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	4	55	▨	3.2	Morocco	+	2.7	3.4 Crimea
1.07	Wastefulness of government spending	4	88	▨	2.8	Nigeria	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	3	48	🟦	3.2	Netherlands	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	9	118	▨	2.5	Peru	−	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	6	114	▨	2.9	Bulgaria	−	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	3	17	🟦	5.9	Mauritius	+	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	7	80	▨	3.9	Sri Lanka	−	4.1	5.2 Zakarpattya
1.13	Organized crime	6	89	▨	4.1	Philippines	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	10	118	▨	2.8	Ecuador	−	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	12	134	▨	2.4	Timor-Leste	−	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	2	79	▨	4.2	Kazakhstan	+	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	8	96	▨	4.2	Honduras	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	12	134	▨	2.0	Russia	−	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**1**	**36**		**4.3**	**Tunisia**	**+**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	1	39	🟦	4.7	El Salvador	+	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	1	49	🟦	3.9	Qatar	+	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	1	13	🟦	5.3	Taiwan, China	+	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	1	45	🟦	4.3	Slovenia	+	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	1	54	▨	4.8	Colombia	+	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	1	48	🟦	5.2	Lithuania	+	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	2	42	🟦	30.0	Uruguay	+	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**12**	**109**		**4.3**	**Hungary**	**−**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	12	133	▨	19.8	Sri Lanka	−	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	1	58	▨	5.3	Belgium	+	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**4**	**73**		**5.8**	**Guyana**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	1	43	🟦	6.2	Colombia	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	9	77	▨	96.7	Sri Lanka	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	1	3	🟦	6.5	Finland	+	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	9	64	▨	13.7	Russia	−	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	4	86	▨	88.7	Madagascar	+	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**1**	**39**		**4.5**	**Luxembourg**	**+**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	1	22	🟦	4.8	New Zealand	+	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	1	4	🟦	6.0	Belgium	+	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	12	133	▨	2.4	Mauritania	−	3.4	4.1 Lviv
5.06	Internet access in schools	1	68	▨	3.5	Argentina	+	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	1	54	▨	3.9	Tanzania	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	1	68	▨	3.5	Colombia	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**2**	**66**		**4.1**	**Croatia**	**+**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	2	45	🟦	5.2	Tunisia	+	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	9	94	▨	3.2	Korea	−	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	2	74	▨	3.5	Namibia	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	2	83	▨	2.9	Peru	+	2.4	3.7 Zakarpattya

Dnipropetrovsk

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	◼	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	◼	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	5	121	◼	2.9	Timor-Leste	+	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	10	127	◼	3.3	Mongolia	−	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	2	106	◼	4.3	Slovenia	+	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	2	104	◼	4.2	Nepal	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	5	61	◼	4.7	Greece	+	4.5	5.0 Donetsk
6.15	Buyer sophistication	2	33	🟦	4.9	Slovenia	+	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**1**	**44**		**4.4**	**Austria**	**+**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	2	50	🟦	4.8	Armenia	+	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	5	46	🟦	5.5	Nicaragua	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	◼	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	◼	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	8	30	🟦	4.8	Tajikistan	−	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	5	35	🟦	4.6	Australia	+	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	5	101	◼	3.7	Albania	+	3.7	4.1 Zakarpattya
7.09	Brain drain	1	48	🟦	3.7	India	+	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**4**	**64**		**4.2**	**Pakistan**	**+**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	1	41	🟦	4.5	Kuwait	+	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	12	119	◼	3.0	Georgia	−	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	10	114	◼	2.3	Guyana	−	2.8	4.3 Sumy
8.04	Venture capital availability	11	116	◼	2.4	Nicaragua	−	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	◼	n/a	multiple		3.7	n/a
8.07	Soundness of banks	2	84	◼	5.1	Bosnia and Herzegovina	+	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**6**	**95**		**2.6**	**Albania**	**+**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	1	64	◼	3.9	Philippines	+	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	6	104	◼	4.1	Argentina	−	4.1	4.7 Kyiv
9.03	Laws relating to ICT	12	118	◼	2.4	Lesotho	−	3.0	3.3 Donetsk
9.04	FDI and technology transfer	11	132	◼	3.6	Chad	−	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	◼	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	◼	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	2	79	◼	4.4	Philippines	+	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	◼	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**5**	**80**		**3.7**	**Azerbaijan**	**−**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	4	53	◼	4.9	Philippines	+	4.6	5.1 Zakarpattya
11.02	Local supplier quality	1	50	🟦	4.6	Cyprus	+	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	12	134	◼	1.3	Burundi	−	3.2	4.0 Sumy
11.04	Nature of competitive advantage	1	37	🟦	3.9	El Salvador	+	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	1	50	🟦	3.9	Latvia	+	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	1	21	🟦	4.8	Hong Kong SAR	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	4	61	◼	3.7	Uruguay	+	3.6	4.7 Zakarpattya
11.08	Extent of marketing	5	90	◼	3.6	Tanzania	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	3	60	◼	3.6	Malta	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**1**	**40**		**3.5**	**Chile**	**+**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	1	29	🟦	4.2	India	+	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	2	35	🟦	4.4	Tunisia	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	1	40	🟦	3.5	China	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	1	46	🟦	3.4	Colombia	+	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	6	100	◼	3.3	Macedonia, FYR	−	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	1	31	🟦	5.2	Hungary	+	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	◼	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

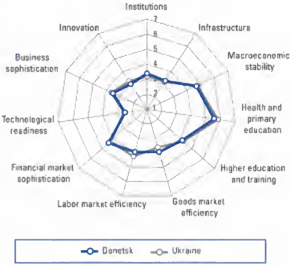
Donetsk

Key indicators

Population (millions), 2006	4.58
Gross Regional Product (UAH millions), 2005	58,044
As share of Ukraine GDP (%), 2005	13.1
Gross Regional Product (UAH) per capita, 2005	12,490

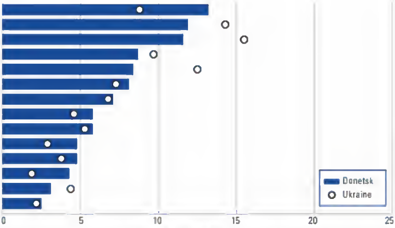
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**7**	**74**	**4.1**
Basic requirements	**6**	**83**	**4.2**
1st pillar: Institutions	2	88	3.4
2nd pillar: Infrastructure	3	68	3.2
3rd pillar: Macroeconomic stability	8	89	4.6
4th pillar: Health and primary education	12	99	5.5
Efficiency enhancers	**7**	**70**	**4.0**
5th pillar: Higher education and training	9	64	4.1
6th pillar: Goods market efficiency	3	79	3.9
7th pillar: Labor market efficiency	12	103	4.0
8th pillar: Financial market sophistication	3	52	4.4
9th pillar: Technological readiness	9	101	2.5
Innovation and sophistication factors	**11**	**93**	**3.3**
11th pillar: Business sophistication	12	95	3.5
12th pillar: Innovation	9	89	3.0



The most problematic factors for doing business

Government instability/coups	13.2%
Tax regulations	11.9%
Policy instability	11.6%
Access to financing	8.7%
Corruption	8.4%
Tax rates	8.1%
Inefficient government bureaucracy	7.1%
Inadequately educated workforce	5.8%
Inflation	5.8%
Poor work ethic in national labour force	4.8%
Crime and theft	4.8%
Foreign currency regulations	4.3%
Inadequate supply of infrastructure	3.1%
Restrictive labour regulations	2.5%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Donetsk

The Global Competitiveness Index in detail

🟦 competitive **advantages**
▨ competitive **disadvantages**

+ **better** than Ukraine's average
– **worse** than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**7**	**74**		**4.1**	**Vietnam**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**6**	**83**		**4.2**	**Indonesia**	**+**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**7**	**70**		**4.0**	**Colombia**	**–**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**11**	**93**		**3.3**	**Uruguay**	**–**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**2**	**88**		**3.4**	**Philippines**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	2	86	▨	3.9	Kazakhstan	+	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	5	100	▨	2.8	Gambia, The	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	1	33	🟦	4.9	Israel	+	3.4	4.9 Donetsk
1.04	Public trust of politicians	2	57	▨	2.5	Pakistan	+	1.8	2.6 Sumy
1.05	Judicial independence	1	83	▨	3.1	Nigeria	+	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	8	105	▨	2.5	Cambodia	–	2.7	3.4 Crimea
1.07	Wastefulness of government spending	1	73	▨	3.0	Korea	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	8	102	▨	2.6	Mexico	–	2.7	3.5 Poltava
1.09	Efficiency of legal framework	1	74	▨	3.4	Benin	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	12	134	▨	2.1	Indonesia	–	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	7	60	▨	5.2	Burkina Faso	–	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	3	53	▨	4.7	Gambia, The	+	4.1	5.2 Zakarpattya
1.13	Organized crime	2	48	🟦	5.3	Morocco	+	4.2	5.9 Zakarpattya
1.14	Reliability of police services	2	60	▨	4.3	Nicaragua	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	11	133	▨	2.5	Timor-Leste	–	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	12	131	▨	3.1	Paraguay	–	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	10	110	▨	4.0	Morocco	–	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	9	131	▨	2.6	Russia	–	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**3**	**68**		**3.2**	**Pakistan**	**+**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	5	75	▨	3.2	India	–	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	3	88	▨	2.6	Philippines	+	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	2	23	🟦	4.6	India	+	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	3	56	▨	3.7	Morocco	+	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	2	70	▨	4.3	Costa Rica	+	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	7	92	▨	3.6	Ethiopia	–	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	4	54	▨	24.0	Trinidad and Tobago	–	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**8**	**89**		**4.6**	**Nepal**	**–**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	10	125	▨	12.1	Ethiopia	–	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	6	86	▨	7.7	Colombia	–	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**12**	**99**		**5.5**	**Mongolia**	**–**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	3	72	▨	5.6	Bosnia and Herzegovina	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	11	87	▨	122.4	Dominican Republic	–	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	4	42	🟦	5.7	Latvia	+	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	10	65	▨	14.3	Russia	–	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	12	113	▨	81.3	Botswana	–	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**9**	**64**		**4.1**	**Romania**	**–**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	4	44	🟦	4.1	Costa Rica	+	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	2	15	🟦	5.4	Hungary	+	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	3	76	▨	3.8	Burkina Faso	+	3.4	4.1 Lviv
5.06	Internet access in schools	12	114	▨	2.2	Zimbabwe	–	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	10	95	▨	3.3	Mauritius	–	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	10	123	▨	2.6	Paraguay	–	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**3**	**79**		**3.9**	**Azerbaijan**	**+**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	7	82	▨	4.6	Italy	–	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	5	72	▨	3.5	Guatemala	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	8	102	▨	3.1	Azerbaijan	–	3.2	3.6 Lviv
6.04	Extent and effect of taxation	5	109	▨	2.4	Guyana	+	2.4	3.7 Zakarpattya

Donetsk

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	2	82	■	3.4	Ecuador	+	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	12	134	■	2.4	Mauritania	−	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	4	113	■	4.1	Kyrgyz Republic	+	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	3	109	■	4.1	Slovenia	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	1	35	🟦	5.0	Colombia	+	4.5	5.0 Donetsk
6.15	Buyer sophistication	6	66	■	4.1	Mexico	−	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**12**	**103**		**4.0**	**India**	**−**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	12	128	■	3.7	Trinidad and Tobago	−	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	6	56	■	5.5	India	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	12	86	■	3.7	Bulgaria	−	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	11	70	■	4.1	Turkey	−	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	9	115	■	3.6	Morocco	−	3.7	4.1 Zakarpattya
7.09	Brain drain	12	120	■	2.2	Egypt	−	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**3**	**52**		**4.4**	**Czech Republic**	**+**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	4	75	■	3.7	Croatia	+	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	2	69	■	4.8	Czech Republic	+	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	2	51	■	3.6	Latvia	+	2.8	4.3 Sumy
8.04	Venture capital availability	2	44	🟦	3.6	Thailand	+	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	6	114	■	4.5	Mozambique	+	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**9**	**101**		**2.5**	**Macedonia, FYR**	**−**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	5	93	■	2.9	Armenia	−	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	11	116	■	3.8	Zimbabwe	−	4.1	4.7 Kyiv
9.03	Laws relating to ICT	1	70	■	3.3	Nigeria	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	12	133	■	3.6	Chad	−	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	5	89	■	3.3	Nicaragua	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**12**	**95**		**3.5**	**Ecuador**	**−**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	12	101	■	4.2	Ecuador	−	4.6	5.1 Zakarpattya
11.02	Local supplier quality	12	119	■	3.2	Mauritania	−	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	4	48	🟦	3.7	Timor-Leste	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	12	129	■	2.4	Argentina	−	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	9	92	■	3.1	Dominican Republic	−	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	6	56	■	4.1	Ireland	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	10	79	■	3.4	Colombia	−	3.6	4.7 Zakarpattya
11.08	Extent of marketing	11	104	■	3.5	Albania	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	8	98	■	3.1	Macedonia, FYR	−	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**9**	**89**		**3.0**	**Mali**	**−**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	6	52	■	3.6	Sri Lanka	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	5	47	🟦	4.1	Sri Lanka	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	10	103	■	2.7	Jordan	−	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	11	105	■	2.5	Mozambique	−	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	8	110	■	3.2	Bulgaria	−	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	6	84	■	4.1	Georgia	−	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

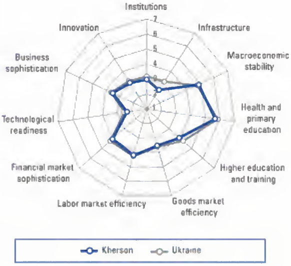
Kherson

Key indicators

Population (millions), 2006	1.12
Gross Regional Product (UAH millions), 2005	6,469
As share of Ukraine GDP (%), 2005	1.5
Gross Regional Product (UAH) per capita, 2005	5,713

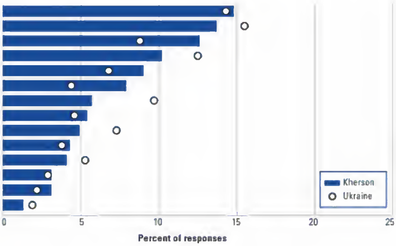
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**11**	**91**	**3.9**
Basic requirements	**11**	**100**	**4.0**
1st pillar: Institutions	10	121	3.0
2nd pillar: Infrastructure	11	103	2.5
3rd pillar: Macroeconomic stability	3	72	4.9
4th pillar: Health and primary education	11	94	5.6
Efficiency enhancers	**12**	**81**	**3.8**
5th pillar: Higher education and training	12	75	3.9
6th pillar: Goods market efficiency	12	115	3.5
7th pillar: Labor market efficiency	8	72	4.2
8th pillar: Financial market sophistication	8	75	4.1
9th pillar: Technological readiness	12	120	2.3
Innovation and sophistication factors	**10**	**92**	**3.3**
11th pillar: Business sophistication	11	94	3.5
12th pillar: Innovation	7	81	3.1



The most problematic factors for doing business

Tax regulations	14.8%
Policy instability	13.7%
Government instability/coups	12.6%
Corruption	10.2%
Inefficient government bureaucracy	9.0%
Inadequate supply of infrastructure	7.9%
Access to financing	5.7%
Inadequately educated workforce	5.4%
Tax rates	4.9%
Crime and theft	4.3%
Inflation	4.1%
Poor work ethic in national labour force	3.1%
Restrictive labour regulations	3.1%
Foreign currency regulations	1.3%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Kherson

The Global Competitiveness Index in detail

🟦 competitive **advantages**
▨ competitive **disadvantages**
+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**11**	**91**		**3.9**	**Uruguay**	**−**	**4.1**	**4.2 Kyiv**
	Basic requirements	**11**	**100**		**4.0**	**Mongolia**	**−**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**12**	**81**		**3.8**	**Trinidad and Tobago**	**−**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**10**	**92**		**3.3**	**Uruguay**	**−**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**10**	**121**		**3.0**	**Zimbabwe**	**−**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	8	118	▨	3.2	Guyana	−	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	8	109	▨	2.6	Kyrgyz Republic	−	2.6	3.0 Kyiv
1.03	Diversion of public funds	3	59	▨	3.7	Poland	+	3.4	4.9 Donetsk
1.04	Public trust of politicians	10	123	▨	1.4	Peru	−	1.8	2.6 Sumy
1.05	Judicial independence	9	120	▨	2.2	Ethiopia	−	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	9	107	▨	2.5	Jamaica	−	2.7	3.4 Crimea
1.07	Wastefulness of government spending	11	129	▨	1.9	Zambia	−	2.5	3.0 Donetsk
1.08	Burden of government regulation	12	134	▨	1.8	Venezuela	−	2.7	3.5 Poltava
1.09	Efficiency of legal framework	10	119	▨	2.5	Peru	−	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	10	129	▨	2.7	Venezuela	−	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	4	27	🟦	5.7	Greece	+	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	11	95	▨	3.5	Uganda	−	4.1	5.2 Zakarpattya
1.13	Organized crime	3	66	▨	4.8	Suriname	+	4.2	5.9 Zakarpattya
1.14	Reliability of police services	5	88	▨	3.5	Pakistan	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	7	125	▨	3.0	Paraguay	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	10	122	▨	3.4	Bolivia	−	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	11	121	▨	3.8	Bosnia and Herzegovina	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	3	120	▨	2.9	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**11**	**103**		**2.5**	**Venezuela**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	11	100	▨	2.6	Bulgaria	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	8	123	▨	1.8	Mozambique	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	12	62	▨	3.0	Morocco	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	11	96	▨	2.7	Venezuela	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	12	132	▨	2.1	Lesotho	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	12	111	▨	3.0	Burkina Faso	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	4	54	▨	24.0	Trinidad and Tobago	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**3**	**72**		**4.9**	**Portugal**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	3	109	▨	9.2	Burundi	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	4	79	▨	6.9	Germany	+	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**11**	**94**		**5.6**	**Honduras**	**−**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	12	132	▨	2.7	Zimbabwe	−	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	12	98	▨	206.0	Ecuador	−	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	12	110	▨	3.6	Cambodia	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	6	57	▨	12.9	multiple	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	8	95	▨	87.3	Latvia	−	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**12**	**75**		**3.9**	**Mexico**	**−**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	5	51	▨	3.9	Lithuania	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	7	61	▨	4.3	Benin	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	7	104	▨	3.3	Bangladesh	−	3.4	4.1 Lviv
5.06	Internet access in schools	8	108	▨	2.5	Honduras	−	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	12	114	▨	2.9	Kyrgyz Republic	−	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	12	129	▨	2.4	Nepal	−	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**12**	**115**		**3.5**	**Nicaragua**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	11	109	▨	4.1	Bulgaria	−	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	11	107	▨	3.0	Philippines	−	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	11	118	▨	2.8	Moldova	−	3.2	3.6 Lviv
6.04	Extent and effect of taxation	10	130	▨	2.1	Kyrgyz Republic	−	2.4	3.7 Zakarpattya

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The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER	
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a	
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a	
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a	
6.08	Agricultural policy costs	11	132	■	2.4	Kyrgyz Republic	−	2.8	4.0	Zakarpattya
6.09	Prevalence of trade barriers	9	118	■	3.5	Vietnam	−	3.7	4.2	Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a	
6.11	Prevalence of foreign ownership	12	133	■	3.1	Russia	−	3.9	4.5	Zakarpattya
6.12	Business impact of rules on FDI	10	130	■	3.3	Kuwait	−	3.8	4.3	Zakarpattya
6.14	Degree of customer orientation	9	87	■	4.3	Dominican Republic	−	4.5	5.0	Donetsk
6.15	Buyer sophistication	12	91	■	3.6	Uruguay	−	4.1	5.1	Zakarpattya
	7th pillar: Labor market efficiency	**8**	**72**		**4.2**	**Bangladesh**	**−**	**4.2**	**4.4**	**Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	11	110	■	4.1	Nepal	−	4.4	5.1	Zakarpattya
7.02	Flexibility of wage determination	2	25	🟦	5.8	Russia	+	5.4	5.8	Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a	
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a	
7.05	Hiring and firing practices	7	27	🟦	4.8	Nigeria	−	4.9	5.6	Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a	
7.07	Pay and productivity	6	42	🟦	4.5	Romania	+	4.5	4.9	Vinnytsya
7.08	Reliance on professional management	11	118	■	3.5	Nepal	−	3.7	4.1	Zakarpattya
7.09	Brain drain	6	92	■	2.6	Tanzania	−	2.7	3.7	Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a	
	8th pillar: Financial market sophistication	**8**	**75**		**4.1**	**Brazil**	**−**	**4.2**	**4.5**	**Sumy**
8.01	Financial market sophistication	10	96	■	3.0	Honduras	−	3.4	4.5	Dnipropetrovsk
8.02	Financing through local equity market	7	99	■	3.8	Costa Rica	−	3.9	4.8	Zakarpattya
8.03	Ease of access to loans	7	83	■	2.8	Philippines	−	2.8	4.3	Sumy
8.04	Venture capital availability	8	85	■	3.0	Turkey	−	3.1	4.3	Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a	
8.07	Soundness of banks	9	123	■	4.4	Russia	−	4.5	5.2	Zakarpattya
	9th pillar: Technological readiness	**12**	**120**		**2.3**	**Suriname**	**−**	**2.6**	**2.8**	**Kyiv**
9.01	Availability of latest technologies	11	124	■	2.3	Bosnia and Herzegovina	−	2.9	3.9	Dnipropetrovsk
9.02	Firm-level technology absorption	10	113	■	3.8	Tajikistan	−	4.1	4.7	Kyiv
9.03	Laws relating to ICT	10	111	■	2.6	Burkina Faso	−	3.0	3.3	Donetsk
9.04	FDI and technology transfer	9	130	■	3.8	Chad	−	4.0	4.4	Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a	
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a	
9.07	Personal computers (per 100 pop.)*	10	97	■	2.5	Moldova	−	3.8	13.5	Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a	
	11th pillar: Business sophistication	**11**	**94**		**3.5**	**Ecuador**	**−**	**3.7**	**4.1**	**Zakarpattya**
11.01	Local supplier quantity	9	84	■	4.5	Cyprus	−	4.6	5.1	Zakarpattya
11.02	Local supplier quality	8	83	■	4.0	Argentina	−	4.1	4.6	Dnipropetrovsk
11.03	State of cluster development	9	109	■	3.0	Bolivia	−	3.2	4.0	Sumy
11.04	Nature of competitive advantage	9	100	■	2.9	Dominican Republic	−	3.1	3.9	Dnipropetrovsk
11.05	Value chain breadth	7	84	■	3.2	Nigeria	−	3.3	3.9	Dnipropetrovsk
11.06	Control of international distribution	11	95	■	3.7	Kenya	−	4.1	4.8	Dnipropetrovsk
11.07	Production process sophistication	11	81	■	3.3	Russia	−	3.6	4.7	Zakarpattya
11.08	Extent of marketing	12	108	■	3.4	Bangladesh	−	3.7	4.7	Zakarpattya
11.09	Willingness to delegate authority	11	114	■	2.8	Nicaragua	−	3.2	3.7	Zakarpattya
	12th pillar: Innovation	**7**	**81**		**3.1**	**Algeria**	**−**	**3.1**	**3.5**	**Dnipropetrovsk**
12.01	Capacity for innovation	5	51	■	3.6	Sri Lanka	−	3.6	4.2	Dnipropetrovsk
12.02	Quality of scientific research institutions	8	58	■	4.0	Barbados	−	4.0	4.5	Kyiv
12.03	Company spending on R&D	9	95	■	2.8	Botswana	−	3.0	3.5	Dnipropetrovsk
12.04	University-industry research collaboration	9	89	■	2.8	Argentina	−	2.9	3.4	Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	5	95	■	3.4	Dominican Republic	+	3.3	4.2	Zakarpattya
12.06	Availability of scientists and engineers	5	76	■	4.2	Peru	+	4.2	5.2	Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a	

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

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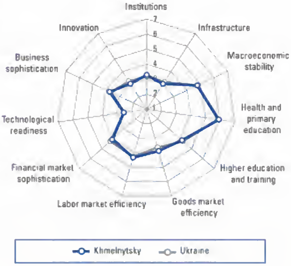
Key indicators

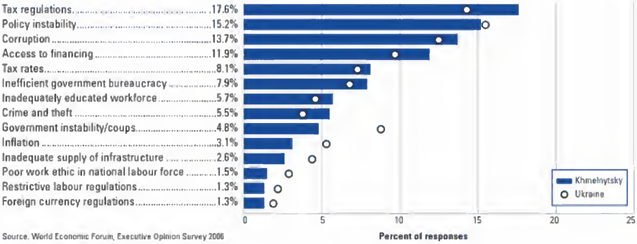
Population (millions), 2006	1.36
Gross Regional Product (UAH millions), 2005	7,958
As share of Ukraine GDP (%), 2005	1.8
Gross Regional Product (UAH) per capita, 2005	5,764

Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**5**	**69**	**4.1**
Basic requirements	**5**	**80**	**4.2**
1st pillar: Institutions	3	94	3.3
2nd pillar: Infrastructure	6	79	3.0
3rd pillar: Macroeconomic stability	6	80	4.7
4th pillar: Health and primary education	3	69	5.9
Efficiency enhancers	**6**	**66**	**4.0**
5th pillar: Higher education and training	7	61	4.1
6th pillar: Goods market efficiency	4	84	3.9
7th pillar: Labor market efficiency	3	56	4.3
8th pillar: Financial market sophistication	7	71	4.1
9th pillar: Technological readiness	5	93	2.6
Innovation and sophistication factors	**7**	**86**	**3.4**
11th pillar: Business sophistication	7	82	3.7
12th pillar: Innovation	8	88	3.0



The most problematic factors for doing business



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

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The Global Competitiveness Index in detail

■ competitive **advantages**
□ competitive **disadvantages**

+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**5**	**69**		**4.1**	**Costa Rica**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**5**	**80**		**4.2**	**Guatemala**	**+**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**6**	**66**		**4.0**	**Jamaica**	**+**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**7**	**86**		**3.4**	**El Salvador**	**−**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**3**	**94**		**3.3**	**Madagascar**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	4	104	□	3.5	Georgia	+	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	4	98	□	2.8	Honduras	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	2	45	■	4.0	Hungary	+	3.4	4.9 Donetsk
1.04	Public trust of politicians	4	80	□	2.1	Lesotho	+	1.8	2.6 Sumy
1.05	Judicial independence	8	113	□	2.4	Macedonia, FYR	−	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	6	61	□	3.1	Croatia	+	2.7	3.4 Crimea
1.07	Wastefulness of government spending	3	86	□	2.8	Sri Lanka	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	7	85	□	2.8	Cambodia	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	2	90	□	3.0	Brazil	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	3	104	□	3.3	Nicaragua	+	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	9	82	□	5.0	Azerbaijan	−	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	8	84	□	3.8	Albania	−	4.1	5.2 Zakarpattya
1.13	Organized crime	8	93	□	4.0	Uganda	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	9	98	□	3.3	Kenya	−	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	2	108	□	3.4	Suriname	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	8	118	□	3.5	Suriname	−	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	5	89	□	4.3	Tanzania	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	2	116	□	3.0	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**6**	**79**		**3.0**	**Kazakhstan**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	6	76	□	3.2	India	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	4	102	□	2.2	Ethiopia	+	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	8	40	■	3.8	Israel	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	6	74	□	3.3	Tanzania	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	8	104	□	3.3	Georgia	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	□	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	10	99	□	3.4	Indonesia	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	10	67	□	21.0	Chile	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**6**	**80**		**4.7**	**Philippines**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	□	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	■	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	6	117	□	10.8	Argentina	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	5	82	□	7.2	Bahrain	+	2.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	■	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**3**	**69**		**5.9**	**Trinidad and Tobago**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	■	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	9	109	□	4.5	Mongolia	−	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	5	66	□	75.8	Colombia	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	6	78	□	4.9	Sri Lanka	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	□	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	4	51	□	11.4	Costa Rica	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	□	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	3	72	□	90.7	Luxembourg	+	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	■	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**7**	**61**		**4.1**	**South Africa**	**−**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	■	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	■	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	8	60	□	3.7	Croatia	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	8	65	□	4.3	Moldova	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	9	111	□	3.2	Zambia	−	3.4	4.1 Lviv
5.06	Internet access in schools	2	75	□	3.3	Colombia	+	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	8	80	□	3.6	Panama	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	8	107	□	2.9	Russia	−	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**4**	**84**		**3.9**	**Russia**	**+**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	5	68	□	4.8	Kuwait	+	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	2	65	□	3.6	Malta	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	4	81	□	3.5	Benin	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	3	92	□	2.8	Jamaica	+	2.4	3.7 Zakarpattya

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The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134	SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	4	110	3.0	Lesotho	+	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	3	93	4.0	Paraguay	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	9	128	3.6	Timor-Leste	−	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	6	114	4.0	Argentina	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	7	84	4.3	Qatar	−	4.5	5.0 Donetsk
6.15	Buyer sophistication	7	69	4.0	Sri Lanka	−	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**3**	**56**	**4.3**	**Croatia**	**+**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	3	58	4.7	Jordan	+	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	10	74	5.1	Mexico	−	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	10	33	4.6	United Arab Emirates	−	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	4	31	4.6	China	+	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	3	90	3.9	Egypt	+	3.7	4.1 Zakarpattya
7.09	Brain drain	2	64	3.2	Poland	+	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**7**	**71**	**4.1**	**Greece**	**−**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	7	86	3.3	Ecuador	−	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	5	93	3.9	El Salvador	+	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	3	66	3.2	Bulgaria	+	2.8	4.3 Sumy
8.04	Venture capital availability	7	75	3.1	Mexico	−	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	n/a	multiple		3.7	n/a
8.07	Soundness of banks	10	127	4.2	Timor-Leste	−	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**5**	**93**	**2.6**	**Nigeria**	**+**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	9	109	2.6	Mongolia	−	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	3	91	4.3	Mali	+	4.1	4.7 Kyiv
9.03	Laws relating to ICT	6	83	3.1	Indonesia	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	5	111	4.7	Timor-Leste	+	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	9	96	2.6	Moldova	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**7**	**82**	**3.7**	**Azerbaijan**	**−**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	7	73	4.6	Trinidad and Tobago	−	4.6	5.1 Zakarpattya
11.02	Local supplier quality	11	91	3.8	Qatar	−	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	6	86	3.3	Mauritius	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	6	81	3.2	Mauritius	+	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	4	70	3.4	Jamaica	+	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	4	50	4.2	Thailand	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	9	77	3.4	Argentina	−	3.6	4.7 Zakarpattya
11.08	Extent of marketing	9	100	3.5	Madagascar	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	5	78	3.4	Greece	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**8**	**88**	**3.0**	**Mali**	**−**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	10	61	3.3	Thailand	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	11	81	3.6	Mauritius	−	4.0	4.5 Kyiv
12.03	Company spending on R&D	7	81	3.0	Panama	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	8	85	2.8	Namibia	−	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	3	72	3.1	El Salvador	+	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	9	102	3.8	Slovenia	−	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

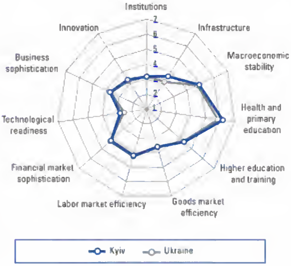
Kyiv

Key indicators

Population (millions), 2006	2.72
Gross Regional Product (UAH millions), 2005	77,124
As share of Ukraine GDP (%), 2005	17.5
Gross Regional Product (UAH) per capita, 2005	28,780

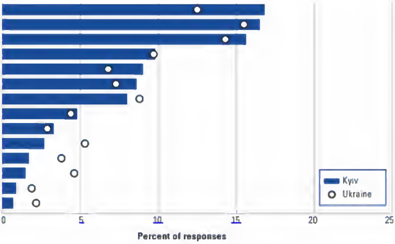
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**1**	**53**	**4.2**
Basic requirements	**1**	**60**	**4.5**
1st pillar: Institutions	6	103	3.2
2nd pillar: Infrastructure	2	57	3.6
3rd pillar: Macroeconomic stability	2	70	4.9
4th pillar: Health and primary education	1	43	6.1
Efficiency enhancers	**5**	**65**	**4.0**
5th pillar: Higher education and training	3	49	4.3
6th pillar: Goods market efficiency	11	108	3.6
7th pillar: Labor market efficiency	4	64	4.2
8th pillar: Financial market sophistication	6	67	4.2
9th pillar: Technological readiness	1	77	2.8
Innovation and sophistication factors	**5**	**74**	**3.5**
11th pillar: Business sophistication	8	84	3.7
12th pillar: Innovation	2	53	3.3



The most problematic factors for doing business

Corruption	16.8%
Policy instability	16.5%
Tax regulations	15.6%
Access to financing	9.8%
Inefficient government bureaucracy	9.0%
Tax rates	8.6%
Government instability/coups	8.0%
Inadequate supply of infrastructure	4.8%
Poor work ethic in national labour force	3.3%
Inflation	2.7%
Crime and theft	1.7%
Inadequately educated workforce	1.5%
Foreign currency regulations	0.9%
Restrictive labour regulations	0.7%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Kyiv

The Global Competitiveness Index in detail

■ competitive **advantages**
□ competitive **disadvantages**
+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**1**	**53**		**4.2**	**Croatia**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**1**	**60**		**4.5**	**India**	**+**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**5**	**65**		**4.0**	**Jamaica**	**+**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**5**	**74**		**3.5**	**Jordan**	**+**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**6**	**103**		**3.2**	**Uganda**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	3	99	□	3.6	Azerbaijan	+	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	1	86	□	3.0	Kenya	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	10	94	□	3.1	Lesotho	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	9	114	□	1.6	Romania	−	1.8	2.6 Sumy
1.05	Judicial independence	6	101	□	2.7	Zambia	+	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	10	108	□	2.5	Jamaica	−	2.7	3.4 Crimea
1.07	Wastefulness of government spending	2	81	□	2.9	Cambodia	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	2	45	■	3.2	Nigeria	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	7	105	□	2.8	Honduras	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	4	107	□	3.1	Zimbabwe	+	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	2	6	■	6.1	Hungary	+	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	2	52	□	4.8	Gambia, The	+	4.1	5.2 Zakarpattya
1.13	Organized crime	9	96	□	3.9	Sri Lanka	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	8	94	□	3.4	Uganda	−	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	9	131	□	2.8	Timor-Leste	−	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	1	76	□	4.2	Tanzania	+	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	9	100	□	4.2	Mauritania	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	7	124	□	2.9	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**2**	**57**		**3.6**	**Jamaica**	**+**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	2	64	□	3.6	Italy	+	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	2	78	□	2.9	Malta	+	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	3	26	■	4.5	Slovak Republic	+	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	2	47	■	4.3	Honduras	+	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	6	101	□	3.4	Nigeria	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	□	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	3	77	□	4.0	Armenia	+	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	1	16	■	54.0	Hong Kong SAR	+	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**2**	**70**		**4.9**	**Albania**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	□	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	■	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	3	109	□	9.2	Burundi	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	2	75	□	6.5	Hong Kong SAR	+	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	■	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**1**	**43**		**6.1**	**Suriname**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	■	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	2	70	□	5.6	Honduras	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	1	56	□	54.8	Algeria	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	2	23	■	6.1	Slovenia	+	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	□	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	1	43	■	9.8	Bahrain	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	□	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	1	28	■	97.3	Poland	+	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	■	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**3**	**49**		**4.3**	**Qatar**	**+**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	■	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	■	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	2	37	■	4.3	Latvia	+	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	5	31	■	5.0	Austria	+	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	2	67	□	4.0	Nicaragua	+	3.4	4.1 Lviv
5.06	Internet access in schools	7	104	□	2.5	Nigeria	−	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	7	78	□	3.6	Trinidad and Tobago	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	5	90	□	3.1	Morocco	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**11**	**108**		**3.6**	**Macedonia, FYR**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	9	91	□	4.4	Barbados	−	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	12	119	□	2.9	Moldova	−	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	10	113	□	2.9	Madagascar	−	3.2	3.6 Lviv
6.04	Extent and effect of taxation	6	113	□	2.4	Colombia	−	2.4	3.7 Zakarpattya

Kyiv

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	▨	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	▨	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	■	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	12	133	▨	2.4	Kyrgyz Republic	−	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	7	109	▨	3.7	Nigeria	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	■	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	6	117	▨	4.0	Albania	+	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	8	124	▨	3.7	Bolivia	−	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	11	90	▨	4.2	China	−	4.5	5.0 Donetsk
6.15	Buyer sophistication	10	86	▨	3.6	Guatemala	−	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**4**	**64**		**4.2**	**Moldova**	−	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	8	97	▨	4.2	Jamaica	−	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	8	64	▨	5.4	Indonesia	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	▨	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	▨	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	5	22	■	5.0	Russia	+	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	■	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	3	30	■	4.6	China	+	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	6	105	▨	3.7	Cambodia	−	3.7	4.1 Zakarpattya
7.09	Brain drain	8	98	▨	2.6	Uganda	−	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	■	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**6**	**67**		**4.2**	**El Salvador**	+	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	2	68	▨	3.9	Philippines	+	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	8	101	▨	3.7	Mozambique	−	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	11	115	▨	2.3	Guyana	−	2.8	4.3 Sumy
8.04	Venture capital availability	3	59	▨	3.3	Bahrain	+	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	▨	n/a	multiple		3.7	n/a
8.07	Soundness of banks	4	110	▨	4.6	Dominican Republic	+	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**1**	**77**		**2.8**	**Venezuela**	+	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	2	66	▨	3.7	Colombia	+	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	1	63	▨	4.7	Azerbaijan	+	4.1	4.7 Kyiv
9.03	Laws relating to ICT	11	113	▨	2.5	Zambia	−	3.0	3.3 Donetsk
9.04	FDI and technology transfer	2	102	▨	4.4	Cameroon	+	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	▨	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	▨	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	1	45	■	13.5	Chile	+	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	▨	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**8**	**84**		**3.7**	**Kazakhstan**	−	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	11	94	▨	4.3	Madagascar	−	4.6	5.1 Zakarpattya
11.02	Local supplier quality	4	67	▨	4.3	Philippines	+	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	11	121	▨	3.7	Zimbabwe	−	3.2	4.0 Sumy
11.04	Nature of competitive advantage	5	74	▨	3.3	Bahrain	+	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	2	56	▨	3.7	Jordan	+	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	2	42	■	4.3	Mauritius	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	5	62	▨	3.7	Uruguay	+	3.6	4.7 Zakarpattya
11.08	Extent of marketing	3	76	▨	4.0	Morocco	+	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	9	100	▨	3.7	Moldova	−	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**2**	**53**		**3.3**	**Turkey**	+	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	2	30	■	4.1	India	+	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	1	31	■	4.5	Iceland	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	4	68	▨	3.7	Malta	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	5	68	▨	3.0	Italy	+	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	9	112	▨	3.7	Bangladesh	−	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	3	53	▨	4.7	Macedonia, FYR	+	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	▨	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

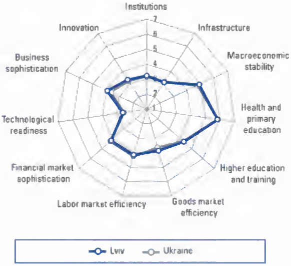
Lviv

Key indicators

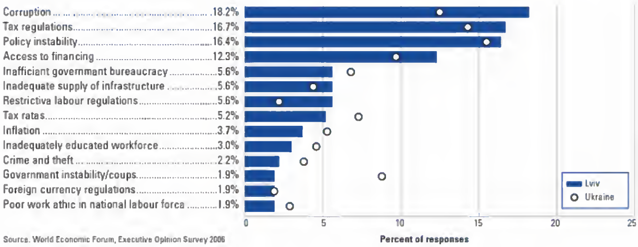
Population (millions), 2006	2.56
Gross Regional Product (UAH millions), 2005	17,192
As share of Ukraine GDP (%), 2005	3.9
Gross Regional Product (UAH) per capita, 2005	6,657

Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**4**	**63**	**4.1**
Basic requirements	**4**	**78**	**4.3**
1st pillar: Institutions	4	99	3.2
2nd pillar: Infrastructure	5	77	3.1
3rd pillar: Macroeconomic stability	1	67	4.9
4th pillar: Health and primary education	7	77	5.8
Efficiency enhancers	**3**	**63**	**4.0**
5th pillar: Higher education and training	2	48	4.3
6th pillar: Goods market efficiency	5	86	3.9
7th pillar: Labor market efficiency	11	79	4.2
8th pillar: Financial market sophistication	5	66	4.2
9th pillar: Technological readiness	3	85	2.6
Innovation and sophistication factors	**2**	**60**	**3.6**
11th pillar: Business sophistication	3	70	3.9
12th pillar: Innovation	3	54	3.3



The most problematic factors for doing business



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Lviv

The Global Competitiveness Index in detail

🟦 competitive **advantages**
▨ competitive **disadvantages**
+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**4**	**63**		**4.1**	**Russia**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**4**	**78**		**4.3**	**Macedonia, FYR**	**+**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**3**	**63**		**4.0**	**Jamaica**	**+**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**2**	**60**		**3.6**	**Barbados**	**+**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**4**	**99**		**3.2**	**Cambodia**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	6	111	▨	3.4	Macedonia, FYR	+	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	3	95	▨	2.8	Georgia	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	8	88	▨	3.2	Guatemala	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	3	79	▨	2.1	Lesotho	+	1.8	2.6 Sumy
1.05	Judicial independence	4	91	▨	2.9	Timor-Leste	+	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	3	54	▨	3.2	Morocco	+	2.7	3.4 Crimea
1.07	Wastefulness of government spending	5	92	▨	2.7	Mozambique	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	5	76	▨	2.9	Kuwait	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	8	109	▨	2.7	Bangladesh	−	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	8	116	▨	2.9	Bulgaria	−	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	6	59	▨	5.2	Burkina Faso	−	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	10	94	▨	3.6	Uganda	−	4.1	5.2 Zakarpattya
1.13	Organized crime	7	92	▨	4.0	Uganda	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	6	90	▨	3.4	Timor-Leste	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	4	118	▨	3.2	Mozambique	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	3	98	▨	3.8	Ecuador	+	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	4	57	▨	4.6	Trinidad and Tobago	+	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	6	123	▨	2.9	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**5**	**77**		**3.1**	**Dominican Republic**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	3	70	▨	3.4	Pakistan	+	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	5	105	▨	2.2	Kenya	+	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	6	34	🟦	4.0	Czech Republic	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	5	65	▨	3.5	Poland	+	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	5	96	▨	3.5	Algeria	+	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	11	105	▨	3.1	Lesotho	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	8	64	▨	22.0	Argentina	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**1**	**67**		**4.9**	**Colombia**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	1	90	▨	7.0	Latvia	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	8	95	▨	8.4	Madagascar	−	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**7**	**77**		**5.8**	**Peru**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	7	95	▨	4.9	Nepal	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	8	76	▨	92.9	Sri Lanka	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	9	90	▨	4.6	Kyrgyz Republic	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	2	48	🟦	10.8	multiple	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	6	92	▨	87.8	Nicaragua	−	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**2**	**48**		**4.3**	**Qatar**	**+**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	3	39	🟦	4.3	Luxembourg	+	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	6	51	▨	4.5	Bosnia and Herzegovina	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	1	65	▨	4.1	Brazil	+	3.4	4.1 Lviv
5.06	Internet access in schools	5	87	▨	3.0	Botswana	+	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	6	75	▨	3.7	Colombia	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	7	93	▨	3.1	Tanzania	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**5**	**96**		**3.9**	**Bangladesh**	**+**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	6	79	▨	4.6	Trinidad and Tobago	−	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	3	66	▨	3.6	Malta	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	1	69	▨	3.6	El Salvador	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	4	95	▨	2.7	Panama	+	2.4	3.7 Zakarpattya

Lviv

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	3	103	■	3.2	Romania	+	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	5	101	■	3.8	Russia	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	3	110	■	4.2	Macedonia, FYR	+	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	7	118	■	3.9	Bosnia and Herzegovina	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	6	75	■	4.4	Hungary	−	4.5	5.0 Donetsk
6.15	Buyer sophistication	11	87	■	3.6	Guatemala	−	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**11**	**79**		**4.2**	**Dominican Republic**	**−**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	10	101	■	4.1	Brazil	−	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	3	38	🟦	5.6	Chad	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	9	31	🟦	4.7	Tajikistan	−	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	9	59	■	4.3	Kyrgyz Republic	−	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	10	117	■	3.5	Nepal	−	3.7	4.1 Zakarpattya
7.09	Brain drain	7	97	■	2.6	Uganda	−	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**5**	**66**		**4.2**	**El Salvador**	**+**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	8	90	■	3.2	Morocco	−	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	3	76	■	4.4	Poland	+	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	6	82	■	2.8	Philippines	−	2.8	4.3 Sumy
8.04	Venture capital availability	5	61	■	3.3	Bahrain	+	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	8	121	■	4.4	Cambodia	−	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**3**	**85**		**2.6**	**Tanzania**	**+**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	4	91	■	2.9	Armenia	+	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	4	95	■	4.2	Bangladesh	+	4.1	4.7 Kyiv
9.03	Laws relating to ICT	4	77	■	3.2	Morocco	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	3	104	■	4.4	China	+	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	8	93	■	2.9	Egypt	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**3**	**70**		**3.9**	**Trinidad and Tobago**	**+**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	3	51	■	4.9	Mauritius	+	4.6	5.1 Zakarpattya
11.02	Local supplier quality	9	84	■	3.9	Argentina	−	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	5	68	■	3.5	Bangladesh	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	2	52	■	3.5	Botswana	+	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	5	74	■	3.4	Bulgaria	+	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	5	53	■	4.2	Portugal	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	3	58	■	3.8	Malta	+	3.6	4.7 Zakarpattya
11.08	Extent of marketing	2	73	■	4.0	Sri Lanka	+	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	4	65	■	3.5	Zimbabwe	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**3**	**54**		**3.3**	**Turkey**	**+**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	3	35	🟦	4.0	Hungary	+	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	4	44	🟦	4.2	Tanzania	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	8	83	■	3.0	Panama	−	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	4	63	■	3.1	Uganda	+	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	4	91	■	3.5	Cyprus	+	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	2	43	🟦	4.8	Spain	+	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

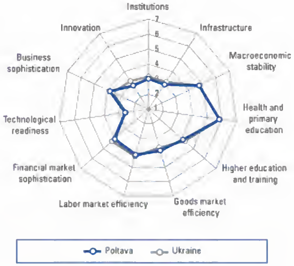
Poltava

Key indicators

Population (millions), 2006	1.54
Gross Regional Product (UAH millions), 2005	18,099
As share of Ukraine GDP (%), 2005	4.1
Gross Regional Product (UAH) per capita, 2005	11,574

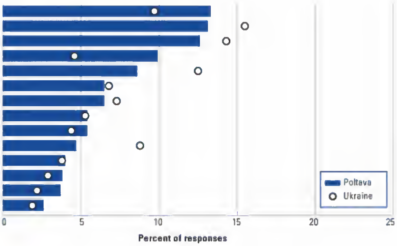
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**8**	**78**	**4.0**
Basic requirements	**8**	**89**	**4.1**
1st pillar: Institutions	9	116	3.0
2nd pillar: Infrastructure	8	81	3.0
3rd pillar: Macroeconomic stability	5	79	4.8
4th pillar: Health and primary education	6	76	5.8
Efficiency enhancers	**8**	**74**	**3.9**
5th pillar: Higher education and training	10	66	4.1
6th pillar: Goods market efficiency	6	89	3.8
7th pillar: Labor market efficiency	10	78	4.2
8th pillar: Financial market sophistication	11	83	4.0
9th pillar: Technological readiness	4	89	2.6
Innovation and sophistication factors	**8**	**87**	**3.4**
11th pillar: Business sophistication	4	75	3.9
12th pillar: Innovation	10	96	2.9



The most problematic factors for doing business

Access to financing	13.3%
Policy instability	13.1%
Tax regulations	12.6%
Inadequately educated workforce	9.9%
Corruption	8.6%
Inefficient government bureaucracy	6.5%
Tax rates	6.5%
Inflation	5.4%
Inadequate supply of infrastructure	5.4%
Government instability/coups	4.7%
Crime and theft	4.0%
Poor work ethic in national labour force	3.8%
Restrictive labour regulations	3.7%
Foreign currency regulations	2.6%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Poltava

The Global Competitiveness Index in detail

🟦 competitive **advantages**
■ competitive **disadvantages**
+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**8**	**78**		**4.0**	**Egypt**	**−**	**4.1**	**4.2 Kyiv**
	Basic requirements	**8**	**89**		**4.1**	**Suriname**	**−**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**8**	**74**		**3.9**	**Mauritius**	**−**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**8**	**87**		**3.4**	**El Salvador**	**−**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**9**	**116**		**3.0**	**Bulgaria**	**−**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	9	120	■	3.1	Russia	−	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	6	104	■	2.7	Vietnam	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	11	101	■	2.9	Armenia	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	5	88	■	2.0	Mexico	+	1.8	2.6 Sumy
1.05	Judicial independence	5	94	■	2.8	El Salvador	+	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	7	104	■	2.5	Cambodia	−	2.7	3.4 Crimea
1.07	Wastefulness of government spending	8	113	■	2.5	Romania	−	2.5	3.0 Donetsk
1.08	Burden of government regulation	1	31	🟦	3.5	Tanzania	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	3	92	■	3.0	Azerbaijan	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	5	110	■	3.1	Bosnia and Herzegovina	+	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	11	96	■	4.7	Morocco	−	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	9	90	■	3.7	Russia	−	4.1	5.2 Zakarpattya
1.13	Organized crime	10	110	■	3.7	Cambodia	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	11	126	■	2.6	Bosnia and Herzegovina	−	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	10	132	■	2.8	Timor-Leste	−	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	6	104	■	3.7	Mozambique	+	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	3	40	🟦	4.9	Russia	+	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	8	130	■	2.6	Russia	−	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**8**	**81**		**3.0**	**Kazakhstan**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	7	78	■	3.1	Algeria	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	6	114	■	2.1	Tajikistan	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	9	48	🟦	3.6	Pakistan	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	9	89	■	3.0	Hungary	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	10	109	■	3.3	Nepal	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	■	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	9	94	■	3.5	Ethiopia	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	3	52	■	25.0	Macedonia, FYR	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**5**	**79**		**4.8**	**Philippines**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	■	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	7	119	■	11.2	Madagascar	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	3	77	■	6.7	Russia	+	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**6**	**76**		**5.8**	**Peru**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	8	103	■	4.7	Philippines	−	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	2	59	■	66.5	Lithuania	+	99.4	54.6 Kyiv
4.05	Business impact of HIV/AIDS	8	85	■	4.7	Thailand	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	■	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	3	50	🟦	11.2	Costa Rica	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	■	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	7	93	■	87.7	Nicaragua	−	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**10**	**66**		**4.1**	**Costa Rica**	**−**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	12	82	■	3.3	Nigeria	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	11	79	■	3.9	Azerbaijan	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	11	119	■	3.0	Armenia	−	3.4	4.1 Lviv
5.06	Internet access in schools	11	113	■	2.2	Zimbabwe	−	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	5	74	■	3.7	Colombia	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	2	71	■	3.4	Macedonia, FYR	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**6**	**89**		**3.8**	**Brazil**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	4	64	■	4.9	Namibia	+	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	6	81	■	3.4	Cameroon	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	9	107	■	3.0	Mozambique	−	3.2	3.6 Lviv
6.04	Extent and effect of taxation	7	117	■	2.4	Suriname	−	2.4	3.7 Zakarpattya

Poltava

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	9	130	■	2.5	Kyrgyz Republic	−	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	1	72	■	4.2	Armenia	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	11	132	■	3.2	Russia	−	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	8	124	■	3.7	Bolivia	−	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	10	88	■	4.3	Dominican Republic	−	4.5	5.0 Donetsk
6.15	Buyer sophistication	3	43	🟦	4.5	Bahrain	+	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**10**	**78**		**4.2**	**Dominican Republic**	**−**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	9	100	■	4.2	Brazil	−	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	11	81	■	5.0	Nigeria	−	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	6	25	🟦	4.9	Nigeria	+	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	10	65	■	4.2	Croatia	−	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	2	82	■	4.0	Mali	+	3.7	4.1 Zakarpattya
7.09	Brain drain	4	82	■	2.7	Suriname	+	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**11**	**83**		**4.0**	**Poland**	**−**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	9	93	■	3.1	Russia	−	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	6	98	■	3.8	Costa Rica	−	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	9	99	■	2.6	Georgia	−	2.8	4.3 Sumy
8.04	Venture capital availability	4	60	■	3.3	Bahrain	+	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	11	129	■	4.0	Algeria	−	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**4**	**89**		**2.6**	**Vietnam**	**+**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	6	96	■	2.8	Cambodia	−	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	8	110	■	3.9	Nepal	−	4.1	4.7 Kyiv
9.03	Laws relating to ICT	2	71	■	3.3	Nigeria	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	4	108	■	4.3	Moldova	+	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	4	86	■	3.7	Georgia	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**4**	**75**		**3.9**	**Nigeria**	**+**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	2	49	🟦	4.9	Portugal	+	4.6	5.1 Zakarpattya
11.02	Local supplier quality	5	74	■	4.1	Romania	+	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	3	42	🟦	3.8	South Africa	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	7	92	■	3.0	Brazil	−	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	11	103	■	2.9	Cameroon	−	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	10	65	■	4.0	Albania	−	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	7	75	■	3.5	Argentina	−	3.6	4.7 Zakarpattya
11.08	Extent of marketing	10	102	■	3.5	Benin	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	6	82	■	3.3	Kenya	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**10**	**96**		**2.9**	**Panama**	**−**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	9	60	■	3.3	Thailand	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	6	49	🟦	4.1	Lithuania	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	6	76	■	3.1	Romania	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	10	100	■	2.6	Ecuador	−	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	12	126	■	2.8	Burundi	−	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	12	118	■	3.4	Ecuador	−	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

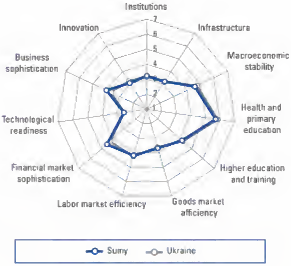
Sumy

Key indicators

Population (millions), 2006	1.21
Gross Regional Product (UAH millions), 2005	8,025
As share of Ukraine GDP (%), 2005	1.8
Gross Regional Product (UAH) per capita, 2005	6,497

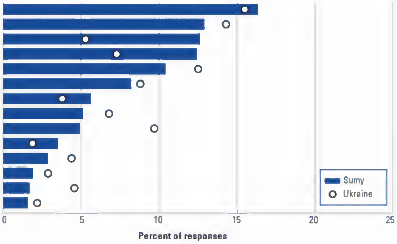
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**6**	**73**	**4.1**
Basic requirements	**7**	**87**	**4.2**
1st pillar: Institutions	5	101	3.2
2nd pillar: Infrastructure	4	72	3.2
3rd pillar: Macroeconomic stability	11	98	4.5
4th pillar: Health and primary education	10	92	5.7
Efficiency enhancers	**4**	**64**	**4.0**
5th pillar: Higher education and training	6	60	4.1
6th pillar: Goods market efficiency	10	104	3.7
7th pillar: Labor market efficiency	7	70	4.2
8th pillar: Financial market sophistication	1	44	4.5
9th pillar: Technological readiness	7	98	2.5
Innovation and sophistication factors	**4**	**71**	**3.5**
11th pillar: Business sophistication	2	63	4.0
12th pillar: Innovation	6	79	3.1



The most problematic factors for doing business

Policy instability	16.3%
Tax regulations	12.9%
Inflation	12.6%
Tax rates	12.4%
Corruption	10.4%
Government instability/coups	8.2%
Crime and theft	5.6%
Inefficient government bureaucracy	5.1%
Access to financing	4.9%
Foreign currency regulations	3.5%
Inadequate supply of infrastructure	2.9%
Poor work ethic in national labour force	1.9%
Inadequately educated workforce	1.7%
Restrictive labour regulations	1.6%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Sumy

The Global Competitiveness Index in detail

🟦 competitive **advantages**
▨ competitive **disadvantages**
+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**6**	**73**		**4.1**	**Vietnam**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**7**	**87**		**4.2**	**Peru**	**−**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**4**	**64**		**4.0**	**Jamaica**	**+**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**4**	**71**		**3.5**	**Panama**	**+**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**5**	**101**		**3.2**	**Kenya**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	5	105	▨	3.5	Georgia	+	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	10	123	▨	2.3	Paraguay	−	2.6	3.0 Kyiv
1.03	Diversion of public funds	5	67	▨	3.5	Italy	+	3.4	4.9 Donetsk
1.04	Public trust of politicians	1	53	▨	2.6	Morocco	+	1.8	2.6 Sumy
1.05	Judicial independence	2	85	▨	3.1	Bosnia and Herzegovina	+	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	2	47	🟦	3.3	Jordan	+	2.7	3.4 Crimea
1.07	Wastefulness of government spending	9	123	▨	2.1	Dominican Republic	−	2.5	3.0 Donetsk
1.08	Burden of government regulation	6	80	▨	2.8	Panama	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	5	97	▨	3.0	Kenya	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	2	103	▨	3.3	Nicaragua	+	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	12	118	▨	4.0	Timor-Leste	−	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	6	75	▨	3.9	China	−	4.1	5.2 Zakarpattya
1.13	Organized crime	11	116	▨	3.3	Kenya	−	4.2	5.9 Zakarpattya
1.14	Reliability of police services	3	80	▨	3.7	Croatia	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	6	121	▨	3.1	Russia	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	7	116	▨	3.6	Uganda	−	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	12	131	▨	3.6	Paraguay	−	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	1	110	▨	3.3	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**4**	**72**		**3.2**	**Poland**	**+**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	4	71	▨	3.4	Pakistan	+	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	9	128	▨	1.7	Cameroon	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	5	30	🟦	4.2	Tunisia	+	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	4	59	▨	3.7	China	+	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	8	104	▨	3.3	Georgia	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	2	65	▨	4.5	Trinidad and Tobago	+	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	8	64	▨	22.0	Argentina	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**11**	**98**		**4.5**	**Moldova**	**−**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	11	128	▨	13.3	Paraguay	−	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	7	92	▨	8.0	Albania	−	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**10**	**92**		**5.7**	**Ecuador**	**−**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	11	122	▨	3.9	Botswana	−	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	3	60	▨	69.1	Lithuania	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	11	102	▨	4.2	Tajikistan	−	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	11	66	▨	14.8	Albania	−	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	11	106	▨	84.7	Lesotho	−	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**6**	**60**		**4.1**	**South Africa**	**−**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	7	58	▨	3.8	Slovenia	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	12	81	▨	3.9	Zimbabwe	−	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	8	108	▨	3.2	Guyana	−	3.4	4.1 Lviv
5.06	Internet access in schools	3	79	▨	3.2	Trinidad and Tobago	+	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	9	89	▨	3.4	Bulgaria	−	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	3	84	▨	3.3	Romania	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**10**	**104**		**3.7**	**Burkina Faso**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	12	122	▨	3.9	Ethiopia	−	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	1	59	▨	3.7	Benin	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	7	91	▨	3.3	Guatemala	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	9	123	▨	2.2	Denmark	−	2.4	3.7 Zakarpattya

Sumy

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	6	123	■	2.8	Suriname	+	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	6	105	■	3.8	Zimbabwe	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	7	124	■	3.7	Moldova	−	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	5	111	■	4.0	Slovenia	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	12	105	■	4.0	Tanzania	−	4.5	5.0 Donetsk
6.15	Buyer sophistication	8	72	■	3.9	Lithuania	−	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**7**	**70**		**4.2**	**Trinidad and Tobago**	**−**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	5	78	■	4.5	Bangladesh	+	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	9	66	■	5.3	Indonesia	−	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	3	12	🟦	5.3	Kyrgyz Republic	+	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	8	55	■	4.4	Germany	−	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	7	109	■	3.6	Dominican Republic	−	3.7	4.1 Zakarpattya
7.09	Brain drain	9	106	■	2.4	Peru	−	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**1**	**44**		**4.5**	**Hungary**	**+**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	6	84	■	3.4	Dominican Republic	−	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	4	79	■	4.3	Macedonia, FYR	+	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	1	31	🟦	4.3	Malta	+	2.8	4.3 Sumy
8.04	Venture capital availability	1	27	🟦	4.3	Belgium	+	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	3	92	■	4.8	Nigeria	+	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**7**	**98**		**2.5**	**Pakistan**	**−**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	7	107	■	2.6	Mongolia	−	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	2	84	■	4.4	Poland	+	4.1	4.7 Kyiv
9.03	Laws relating to ICT	7	84	■	3.1	Indonesia	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	8	126	■	3.9	Macedonia, FYR	−	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	6	91	■	3.2	Egypt	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**2**	**63**		**4.0**	**Bahrain**	**+**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	6	64	■	4.7	Jordan	+	4.6	5.1 Zakarpattya
11.02	Local supplier quality	3	64	■	4.3	El Salvador	+	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	1	35	🟦	4.0	Brazil	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	3	65	■	3.4	Egypt	+	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	3	58	■	3.7	Brazil	+	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	7	57	■	4.1	Ireland	+	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	6	72	■	3.5	Jordan	−	3.6	4.7 Zakarpattya
11.08	Extent of marketing	8	97	■	3.6	Egypt	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	2	58	■	3.7	El Salvador	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**6**	**79**		**3.1**	**Burkina Faso**	**−**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	8	59	■	3.4	Thailand	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	10	76	■	3.7	Romania	−	4.0	4.5 Kyiv
12.03	Company spending on R&D	5	71	■	3.1	Guatemala	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	3	51	■	3.3	United Arab Emirates	+	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	2	70	■	3.7	Croatia	+	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	10	103	■	3.8	Slovenia	−	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

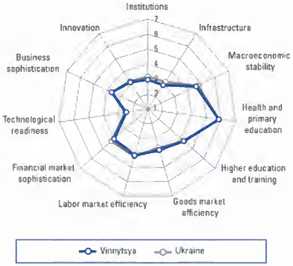
Vinnytsya

Key indicators

Population (millions), 2006	1.69
Gross Regional Product (UAH millions), 2005	10,207
As share of Ukraine GDP (%), 2005	2.3
Gross Regional Product (UAH) per capita, 2005	5,966

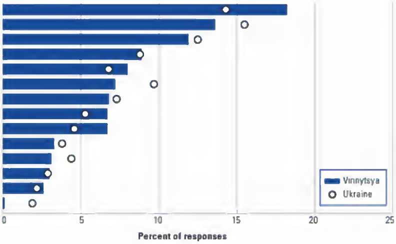
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**10**	**82**	**4.0**
Basic requirements	**10**	**96**	**4.1**
1st pillar: Institutions	11	122	3.0
2nd pillar: Infrastructure	10	84	2.9
3rd pillar: Macroeconomic stability	10	93	4.6
4th pillar: Health and primary education	5	75	5.8
Efficiency enhancers	**9**	**75**	**3.9**
5th pillar: Higher education and training	4	55	4.2
6th pillar: Goods market efficiency	7	92	3.8
7th pillar: Labor market efficiency	6	69	4.2
8th pillar: Financial market sophistication	9	79	4.0
9th pillar: Technological readiness	10	104	2.4
Innovation and sophistication factors	**6**	**85**	**3.4**
11th pillar: Business sophistication	9	87	3.7
12th pillar: Innovation	5	74	3.1



The most problematic factors for doing business

Tax regulations	18.2%
Policy instability	13.6%
Corruption	11.9%
Government instability/coups	8.9%
Inefficient government bureaucracy	8.0%
Access to financing	7.2%
Tax rates	6.8%
Inflation	6.7%
Inadequately educated workforce	6.7%
Crime and theft	3.3%
Inadequate supply of infrastructure	3.1%
Poor work ethic in national labour force	3.0%
Restrictive labour regulations	2.6%
Foreign currency regulations	0.1%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Vinnytsya

The Global Competitiveness Index in detail

🟦 competitive advantages
▨ competitive disadvantages

+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**10**	**82**		**4.0**	**Romania**	**−**	**4.1**	**4.2 Kyiv**
	Basic requirements	**10**	**96**		**4.1**	**Philippines**	**−**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**9**	**75**		**3.9**	**Mauritius**	**−**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**6**	**85**		**3.4**	**El Salvador**	**−**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**11**	**122**		**3.0**	**Zimbabwe**	**−**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	7	115	▨	3.4	Ecuador	−	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	11	125	▨	2.2	Timor-Leste	−	2.6	3.0 Kyiv
1.03	Diversion of public funds	7	82	▨	3.2	Indonesia	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	11	128	▨	1.4	Venezuela	−	1.8	2.6 Sumy
1.05	Judicial independence	12	128	▨	1.9	Peru	−	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	12	130	▨	2.0	Honduras	−	2.7	3.4 Crimea
1.07	Wastefulness of government spending	10	124	▨	2.1	Dominican Republic	−	2.5	3.0 Donetsk
1.08	Burden of government regulation	10	127	▨	2.1	Bosnia and Herzegovina	−	2.7	3.5 Poltava
1.09	Efficiency of legal framework	11	127	▨	2.4	Georgia	−	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	9	124	▨	2.8	Albania	−	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	5	37	🟦	5.6	Estonia	+	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	4	62	▨	4.4	Lithuania	+	4.1	5.2 Zakarpattya
1.13	Organized crime	4	75	▨	4.5	Lesotho	+	4.2	5.9 Zakarpattya
1.14	Reliability of police services	7	91	▨	3.4	Timor-Leste	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	8	127	▨	2.9	Paraguay	−	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	4	100	▨	3.8	Guyana	+	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	2	36	🟦	5.0	Thailand	+	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	4	121	▨	2.9	Russia	+	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**10**	**84**		**2.9**	**Sri Lanka**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	10	84	▨	3.0	Sri Lanka	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	12	133	▨	1.5	Moldova	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	4	29	🟦	4.3	Tunisia	+	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	7	80	▨	3.2	Slovak Republic	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	7	102	▨	3.4	Nigeria	−	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	8	93	▨	3.6	Ethiopia	−	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	11	72	▨	18.0	Suriname	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**10**	**93**		**4.6**	**Japan**	**−**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	🟦	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	8	121	▨	11.5	Azerbaijan	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	12	101	▨	9.0	Guatemala	−	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	🟦	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**5**	**75**		**5.8**	**Peru**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	🟦	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	5	87	▨	5.3	Trinidad and Tobago	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	7	72	▨	82.9	Nicaragua	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	5	63	▨	5.2	Vietnam	+	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	5	52	▨	11.8	Costa Rica	+	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	5	87	▨	88.5	Madagascar	+	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	🟦	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**4**	**55**		**4.2**	**Kazakhstan**	**+**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	🟦	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	🟦	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	6	55	▨	3.8	Kazakhstan	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	3	27	🟦	5.0	New Zealand	+	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	10	114	▨	3.2	Cambodia	−	3.4	4.1 Lviv
5.06	Internet access in schools	10	112	▨	2.3	Zimbabwe	−	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	3	65	▨	3.8	Peru	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	6	92	▨	3.1	Tanzania	+	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**7**	**92**		**3.8**	**Mongolia**	**−**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	3	51	▨	5.0	Costa Rica	+	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	10	102	▨	3.1	Tajikistan	−	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	6	90	▨	3.3	Guatemala	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	11	132	▨	1.9	Belgium	−	2.4	3.7 Zakarpattya

Vinnytsya

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	8	127	■	2.6	Moldova	−	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	4	96	■	3.9	Norway	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	5	114	■	4.1	Kyrgyz Republic	+	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	4	110	■	4.0	Slovenia	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	4	60	■	4.7	Greece	+	4.5	5.0 Donetsk
6.15	Buyer sophistication	9	82	■	3.7	Peru	−	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**6**	**69**		**4.2**	**Trinidad and Tobago**	−	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	7	86	■	4.3	Morocco	−	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	4	45	🟦	5.5	Nicaragua	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	11	44	🟦	4.5	Tunisia	−	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	1	16	🟦	4.9	Lithuania	+	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	4	95	■	3.8	Bangladesh	+	3.7	4.1 Zakarpattya
7.09	Brain drain	11	117	■	2.3	Burundi	−	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**9**	**79**		**4.0**	**Colombia**	−	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	5	83	■	3.4	Dominican Republic	−	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	10	106	■	3.6	Benin	−	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	12	122	■	2.2	Cambodia	−	2.8	4.3 Sumy
8.04	Venture capital availability	9	96	■	2.7	Honduras	−	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	7	118	■	4.5	Paraguay	−	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**10**	**104**		**2.4**	**Zambia**	−	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	8	108	■	2.6	Mongolia	−	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	9	111	■	3.8	Nepal	−	4.1	4.7 Kyiv
9.03	Laws relating to ICT	9	100	■	2.9	Vietnam	−	3.0	3.3 Donetsk
9.04	FDI and technology transfer	7	122	■	3.9	Tajikistan	−	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	11	98	■	2.4	Moldova	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**9**	**87**		**3.7**	**Russia**	−	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	5	57	■	4.8	Luxembourg	+	4.6	5.1 Zakarpattya
11.02	Local supplier quality	6	79	■	4.0	Namibia	−	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	8	102	■	3.1	Madagascar	−	3.2	4.0 Sumy
11.04	Nature of competitive advantage	10	110	■	2.8	Kyrgyz Republic	−	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	12	104	■	2.9	Cameroon	−	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	8	61	■	4.1	Qatar	−	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	8	76	■	3.4	Argentina	−	3.6	4.7 Zakarpattya
11.08	Extent of marketing	4	88	■	3.7	Georgia	−	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	10	105	■	3.0	Mauritania	−	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**5**	**74**		**3.1**	**Romania**	+	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	11	69	■	3.2	Nigeria	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	7	54	■	4.0	Chile	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	2	46	🟦	3.4	Russia	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	7	83	■	2.9	Romania	−	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	7	101	■	3.3	Macedonia, FYR	−	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	4	56	■	4.6	Mongolia	+	4.2	5.2 Dnipropetrovsk
12.07	USPTO utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

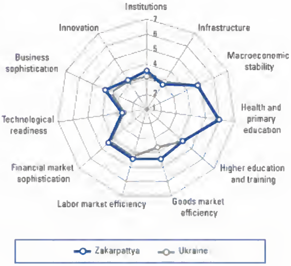
Zakarpattya

Key indicators

Population (millions), 2006	1.24
Gross Regional Product (UAH millions), 2005	6,700
As share of Ukraine GDP (%), 2005	1.5
Gross Regional Product (UAH) per capita, 2005	5,373

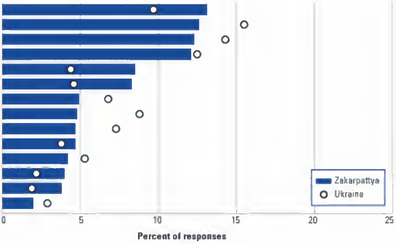
Global Competitiveness Index

	Regional Rank (out of 12)	Overall Rank (out of 134)	Score (1–7)
Global Competitiveness Index 2006 Ukraine	**3**	**57**	**4.2**
Basic requirements	**3**	**74**	**4.3**
1st pillar: Institutions	1	76	3.6
2nd pillar: Infrastructure	7	80	3.0
3rd pillar: Macroeconomic stability	4	77	4.8
4th pillar: Health and primary education	2	67	5.9
Efficiency enhancers	**1**	**47**	**4.2**
5th pillar: Higher education and training	5	57	4.2
6th pillar: Goods market efficiency	1	45	4.4
7th pillar: Labor market efficiency	2	45	4.4
8th pillar: Financial market sophistication	2	51	4.4
9th pillar: Technological readiness	2	81	2.7
Innovation and sophistication factors	**1**	**54**	**3.7**
11th pillar: Business sophistication	1	57	4.1
12th pillar: Innovation	4	57	3.3



The most problematic factors for doing business

Access to financing	13.1%
Policy instability	12.6%
Tax regulations	12.3%
Corruption	12.1%
Inadequate supply of infrastructure	8.5%
Inadequately educated workforce	8.3%
Inefficient government bureaucracy	4.9%
Government instability/coups	4.8%
Tax rates	4.7%
Crime and theft	4.7%
Inflation	4.2%
Restrictive labour regulations	4.0%
Foreign currency regulations	3.8%
Poor work ethic in national labour force	2.0%



Source: World Economic Forum, Executive Opinion Survey 2006

Note: From a list of 14 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Zakarpattya

The Global Competitiveness Index in detail

■ competitive **advantages**
▨ competitive **disadvantages**

+ better than Ukraine's average
− worse than Ukraine's average

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
	Global Competitiveness Index	**3**	**57**		**4.2**	**Kazakhstan**	**+**	**4.1**	**4.2 Kyiv**
	Basic requirements	**3**	**74**		**4.3**	**Colombia**	**+**	**4.2**	**4.5 Kyiv**
	Efficiency enhancers	**1**	**47**		**4.2**	**Cyprus**	**+**	**4.0**	**4.2 Zakarpattya**
	Innovation and sophistication factors	**1**	**54**		**3.7**	**Cyprus**	**+**	**3.4**	**3.7 Zakarpattya**
	1st pillar: Institutions	**1**	**76**		**3.6**	**Kazakhstan**	**+**	**3.1**	**3.6 Zakarpattya**
1.01	Property rights	1	82	▨	4.0	China	+	3.4	4.0 Zakarpattya
1.02	Intellectual property protection	2	90	▨	2.9	Nigeria	+	2.6	3.0 Kyiv
1.03	Diversion of public funds	6	74	▨	3.4	Moldova	−	3.4	4.9 Donetsk
1.04	Public trust of politicians	7	98	▨	1.8	Honduras	−	1.8	2.6 Sumy
1.05	Judicial independence	10	123	▨	2.1	Ecuador	−	2.6	3.1 Donetsk
1.06	Favoritism in decisions of government officials	5	59	▨	3.1	Bahrain	+	2.7	3.4 Crimea
1.07	Wastefulness of government spending	6	95	▨	2.7	Vietnam	+	2.5	3.0 Donetsk
1.08	Burden of government regulation	4	60	▨	3.0	Germany	+	2.7	3.5 Poltava
1.09	Efficiency of legal framework	6	101	▨	2.9	Macedonia, FYR	+	2.8	3.4 Donetsk
1.10	Transparency of government policymaking	1	57	▨	4.1	Belgium	+	3.0	4.1 Zakarpattya
1.11	Business costs of terrorism	1	2	■	6.2	Finland	+	5.4	6.2 Zakarpattya
1.12	Business costs of crime and violence	1	37	■	5.2	Israel	+	4.1	5.2 Zakarpattya
1.13	Organized crime	1	23	■	5.9	Hong Kong SAR	+	4.2	5.9 Zakarpattya
1.14	Reliability of police services	1	55	▨	4.3	Bahrain	+	3.4	4.3 Zakarpattya
1.15	Ethical behavior of firms	1	107	▨	3.4	Suriname	+	3.0	3.4 Zakarpattya
1.16	Strength of auditing and accounting standards	5	102	▨	3.8	Moldova	+	3.7	4.2 Kyiv
1.17	Efficacy of corporate boards	1	4	■	5.8	Australia	+	4.4	5.8 Zakarpattya
1.18	Protection of minority shareholders' interests	10	132	▨	2.6	Russia	−	2.7	3.3 Sumy
	2nd pillar: Infrastructure	**7**	**80**		**3.0**	**Kazakhstan**	**−**	**3.1**	**4.3 Dnipropetrovsk**
2.01	Overall infrastructure quality	8	79	▨	3.1	Algeria	−	3.2	4.7 Dnipropetrovsk
2.02	Quality of roads	11	131	▨	1.6	Timor-Leste	−	2.2	3.9 Dnipropetrovsk
2.03	Quality of railroad infrastructure	7	35	■	4.0	Czech Republic	−	4.0	5.3 Dnipropetrovsk
2.04	Quality of port infrastructure	8	82	▨	3.2	Kenya	−	3.4	4.3 Dnipropetrovsk
2.05	Quality of air transport infrastructure	4	92	▨	3.7	Tanzania	+	3.5	4.8 Dnipropetrovsk
2.06	Available seat kilometers (per week, in millions)*		58	▨	n/a	Nigeria		144.9	n/a
2.07	Quality of electricity supply	4	81	▨	3.9	Argentina	+	3.8	5.2 Dnipropetrovsk
2.08	Main telephone lines (per 100 pop.)*	12	78	▨	15.0	Armenia	−	26.0	54.0 Kyiv
	3rd pillar: Macroeconomic stability	**4**	**77**		**4.8**	**Bangladesh**	**+**	**4.7**	**4.9 Lviv**
3.01	Central government balance (% of GDP)*		69	▨	n/a	Belgium, Mozambique		-2.3	n/a
3.02	National savings rate (% of GDP)*		45	■	n/a	Denmark		22.6	n/a
3.03	Annual percent change in consumer price index	2	103	▨	8.7	Botswana	+	11.6	7.0 Lviv
3.04	Interest rate spread (%)*	10	99	▨	8.8	Guatemala	−	7.6	5.3 Dnipropetrovsk
3.05	Government gross debt (% of GDP)*		17	■	n/a	Lithuania		19.7	n/a
	4th pillar: Health and primary education	**2**	**67**		**5.9**	**Paraguay**	**+**	**5.8**	**6.1 Kyiv**
4.02	Malaria incidence (cases per 100,000 pop.)*		1	■	n/a	multiple		0.0	n/a
4.03	Business impact of tuberculosis	4	78	▨	5.5	Dominican Republic	+	4.9	6.2 Dnipropetrovsk
4.04	Tuberculosis incidence (cases per 100,000 pop.)*	4	61	▨	69.7	Lithuania	+	99.4	54.8 Kyiv
4.05	Business impact of HIV/AIDS	3	25	■	6.0	Jordan	+	5.2	6.5 Dnipropetrovsk
4.06	HIV prevalence (% of adult pop.)*		95	▨	n/a	Gambia, The		1.4	n/a
4.07	Infant mortality (deaths per 1,000 live births)*	12	67	▨	15.0	Albania	−	13.0	9.8 Kyiv
4.08	Life expectancy at birth (years)*		82	▨	n/a	multiple		67.0	n/a
4.10	Primary education enrolment (net rate, %)*	2	69	▨	91.2	Russia	+	88.1	97.3 Kyiv
4.11	Education expenditure (% of GNI)*		50	■	n/a	Egypt		4.4	n/a
	5th pillar: Higher education and training	**5**	**57**		**4.2**	**United Arab Emirates**	**+**	**4.2**	**4.5 Dnipropetrovsk**
5.01	Secondary education enrolment (gross rate, %)*		45	■	n/a	Russia		92.9	n/a
5.02	Tertiary education enrolment (gross rate, %)*		14	■	n/a	Russia		66.0	n/a
5.03	Quality of the educational system	10	67	▨	3.6	Portugal	−	3.9	4.8 Dnipropetrovsk
5.04	Quality of math and science education	4	30	■	5.0	Austria	+	4.7	6.0 Dnipropetrovsk
5.05	Quality of management schools	4	92	▨	3.4	Algeria	+	3.4	4.1 Lviv
5.06	Internet access in schools	4	82	▨	3.1	South Africa	+	2.8	3.5 Dnipropetrovsk
5.07	Local availability of research and training services	2	61	▨	3.9	Nigeria	+	3.5	3.9 Dnipropetrovsk
5.08	Extent of staff training	11	124	▨	2.6	Paraguay	−	3.0	3.5 Dnipropetrovsk
	6th pillar: Goods market efficiency	**1**	**45**		**4.4**	**Mauritius**	**+**	**3.8**	**4.4 Zakarpattya**
6.01	Intensity of local competition	1	15	■	5.7	France	+	4.7	5.7 Zakarpattya
6.02	Extent of market dominance	7	83	▨	3.4	Barbados	+	3.3	3.7 Sumy
6.03	Effectiveness of anti-monopoly policy	3	75	▨	3.5	Namibia	+	3.2	3.6 Lviv
6.04	Extent and effect of taxation	1	38	■	3.7	Latvia	+	2.4	3.7 Zakarpattya

Zakarpattya

The Global Competitiveness Index in detail

	INDICATOR	RANK/12	/134		SCORE	AT LEVEL OF		UKRAINE'S AVERAGE	BEST PERFORMER
6.05	Total tax rate (% of profits)*		90	■	n/a	Egypt		60.5	n/a
6.06	Number of procedures required to start a business*		104	■	n/a	multiple		15.0	n/a
6.07	Number of days required to start a business*		49	🟦	n/a	Russia		34.0	n/a
6.08	Agricultural policy costs	1	36	🟦	4.0	Mauritius	+	2.8	4.0 Zakarpattya
6.09	Prevalence of trade barriers	2	74	■	4.1	Namibia	+	3.7	4.2 Poltava
6.10	Trade-weighted tariff rate (% duty)*		41	🟦	n/a	Turkey		3.9	n/a
6.11	Prevalence of foreign ownership	1	94	■	4.5	Georgia	+	3.9	4.5 Zakarpattya
6.12	Business impact of rules on FDI	1	101	■	4.3	Poland	+	3.8	4.3 Zakarpattya
6.14	Degree of customer orientation	2	39	🟦	5.0	Spain	+	4.5	5.0 Donetsk
6.15	Buyer sophistication	1	28	🟦	5.1	Iceland	+	4.1	5.1 Zakarpattya
	7th pillar: Labor market efficiency	**2**	**45**		**4.4**	**Austria**	**+**	**4.2**	**4.4 Dnipropetrovsk**
7.01	Cooperation in labor-employer relations	1	26	🟦	5.1	Hungary	+	4.4	5.1 Zakarpattya
7.02	Flexibility of wage determination	7	58	■	5.5	China	+	5.4	5.8 Cherkasy
7.03	Non-wage labor costs (% of worker's salary)*		111	■	n/a	Brazil		39.1	n/a
7.04	Rigidity of Employment Index (0-100, 100 is worst)*		97	■	n/a	multiple		55.0	n/a
7.05	Hiring and firing practices	4	15	🟦	5.2	United States	+	4.9	5.6 Cherkasy
7.06	Firing costs (in weeks of wage)*		15	🟦	n/a	Denmark		13.0	n/a
7.07	Pay and productivity	2	20	🟦	4.8	Czech Republic	+	4.5	4.9 Vinnytsya
7.08	Reliance on professional management	1	79	■	4.1	China	+	3.7	4.1 Zakarpattya
7.09	Brain drain	5	89	■	2.7	Ecuador	−	2.7	3.7 Dnipropetrovsk
7.10	Female participation in labor force (% of male participation)*		26	🟦	n/a	Estonia		0.9	n/a
	8th pillar: Financial market sophistication	**2**	**51**		**4.4**	**Czech Republic**	**+**	**4.2**	**4.5 Sumy**
8.01	Financial market sophistication	3	73	■	3.7	Azerbaijan	+	3.4	4.5 Dnipropetrovsk
8.02	Financing through local equity market	1	68	■	4.8	Czech Republic	+	3.9	4.8 Zakarpattya
8.03	Ease of access to loans	4	77	■	2.9	Brazil	+	2.8	4.3 Sumy
8.04	Venture capital availability	10	100	■	2.7	China	−	3.1	4.3 Sumy
8.06	Strength of Investor Protection (0-10, 10 is best)*		96	■	n/a	multiple		3.7	n/a
8.07	Soundness of banks	1	79	■	5.2	Kazakhstan	+	4.5	5.2 Zakarpattya
	9th pillar: Technological readiness	**2**	**81**		**2.7**	**Egypt**	**+**	**2.6**	**2.8 Kyiv**
9.01	Availability of latest technologies	3	77	■	3.5	Romania	+	2.9	3.9 Dnipropetrovsk
9.02	Firm-level technology absorption	5	100	■	4.1	Cameroon	+	4.1	4.7 Kyiv
9.03	Laws relating to ICT	3	72	■	3.3	Nigeria	+	3.0	3.3 Donetsk
9.04	FDI and technology transfer	6	114	■	4.2	Mongolia	+	4.0	4.4 Cherkasy
9.05	Mobile telephone subscribers (per 100 pop.)*		70	■	n/a	Dominican Republic		28.5	n/a
9.06	Internet users (per 10,000 pop.)*		72	■	n/a	South Africa		778.8	n/a
9.07	Personal computers (per 100 pop.)*	12	100	■	2.2	Bolivia	−	3.8	13.5 Kyiv
9.08	Broadband Internet subscribers (per 100 pop.)*		54	■	n/a	Greece		1.4	n/a
	11th pillar: Business sophistication	**1**	**57**		**4.1**	**Jamaica**	**+**	**3.7**	**4.1 Zakarpattya**
11.01	Local supplier quantity	1	35	🟦	5.1	Israel	+	4.6	5.1 Zakarpattya
11.02	Local supplier quality	2	55	■	4.5	Malta	+	4.1	4.6 Dnipropetrovsk
11.03	State of cluster development	7	90	■	3.2	Botswana	+	3.2	4.0 Sumy
11.04	Nature of competitive advantage	11	113	■	2.7	Lesotho	−	3.1	3.9 Dnipropetrovsk
11.05	Value chain breadth	10	98	■	3.0	Macedonia, FYR	−	3.3	3.9 Dnipropetrovsk
11.06	Control of international distribution	9	63	■	4.0	Malta	−	4.1	4.8 Dnipropetrovsk
11.07	Production process sophistication	1	28	🟦	4.7	Italy	+	3.6	4.7 Zakarpattya
11.08	Extent of marketing	1	50	🟦	4.7	Dominican Republic	+	3.7	4.7 Zakarpattya
11.09	Willingness to delegate authority	1	51	■	3.7	Turkey	+	3.2	3.7 Zakarpattya
	12th pillar: Innovation	**4**	**57**		**3.3**	**Sri Lanka**	**+**	**3.1**	**3.5 Dnipropetrovsk**
12.01	Capacity for innovation	7	55	■	3.5	Slovak Republic	−	3.6	4.2 Dnipropetrovsk
12.02	Quality of scientific research institutions	3	37	🟦	4.3	Uganda	+	4.0	4.5 Kyiv
12.03	Company spending on R&D	3	62	■	3.2	Hungary	+	3.0	3.5 Dnipropetrovsk
12.04	University-industry research collaboration	2	49	🟦	3.3	Jamaica	+	2.9	3.4 Dnipropetrovsk
12.05	Gov't procurement of advanced technology products	1	32	🟦	4.2	United Kingdom	+	3.3	4.2 Zakarpattya
12.06	Availability of scientists and engineers	7	95	■	3.9	Zimbabwe	−	4.2	5.2 Dnipropetrovsk
12.07	USPTA utility patents granted in 2006 (per mio pop.)*		52	■	n/a	Bulgaria		0.4	n/a

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Competitiveness Profiles" on page 168.

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In preparing *The Ukraine Competitiveness Report 2008*, we benefited from the valuable contributions of the following experts to whom we wish to extend our sincere gratitude.

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FOUNDATION
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GOVERNANCE

The Foundation for Effective Governance (FEG) was established in 2007 by Ukrainian entrepreneur Rinat Akhmetov with a mission to support the long-term economic development of Ukraine. The FEG's ultimate goal is to improve the standard of living of each Ukrainian citizen through the growth and development of the country's economy. The Foundation plans to realize this goal by developing and implementing long-term projects and programmes that encourage economic growth in Ukraine. FEG will attract leading Ukrainian and international experts with proven experience, strong expertise and excellent reputations to work on its programmes.

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Since the beginning of the decade, Ukraine has been enjoying spectacular rates of growth. Initial reform efforts as well as the favorable economic environment have contributed to this remarkable growth, but the country is still far from realizing its full growth potential. Further reforms will be necessary to maintain these growth rates over the medium to longer term. The positive economic developments in the country provide an excellent opportunity to implement these.

Against this backdrop, *The Ukraine Competitiveness Report 2008* aims at providing an insightful account of Ukraine's competitive advantages and disadvantages by an in-depth assessment of the 12 categories that have an impact competitiveness for the nation as a whole and for 12 selected regions.

Building on the methodology of the World Economic Forum's landmark publication, *The Global Competitiveness Report*, this report benchmarks Ukraine against 130 countries covered by the latter. The analysis is complemented by case studies of countries that could serve as examples for Ukraine as well as by commentaries by Ukrainian experts on specific issues related to competitiveness.

For the 12 selected regions, the report provides a wealth of unique data related to different aspects of the business environment obtained through the World Economic Forum's Executive Opinion Survey. All data on which the assessments are based are summarized in a user-friendly way in the detailed competitiveness profiles at the end of the report.

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